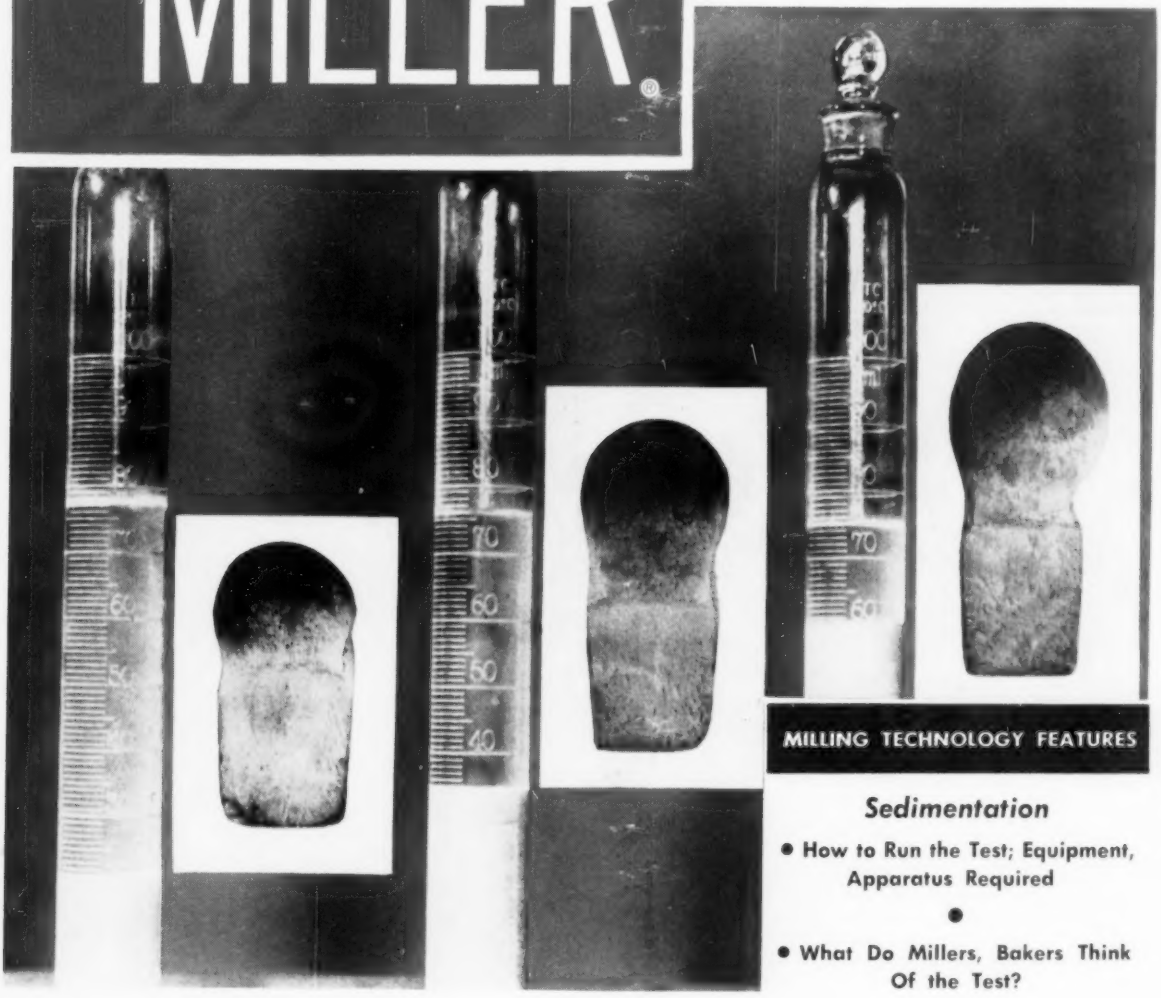
the NORTHWESTERN MILLER

THE INTERNATIONAL MAGAZINE
FOR THE GRAIN, MILLING
AND BAKING INDUSTRIES



MILLING TECHNOLOGY FEATURES

Sedimentation

- **How to Run the Test; Equipment, Apparatus Required**
- **What Do Millers, Bakers Think Of the Test?**

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Volume 265 **OCTOBER 16, 1961** **Number 22**

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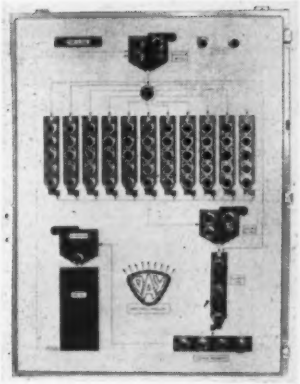

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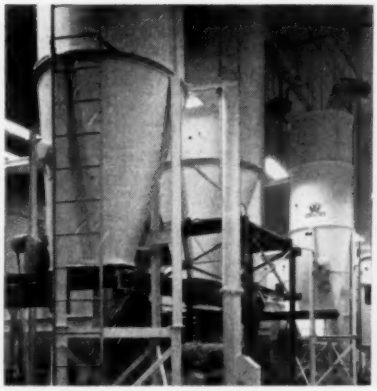
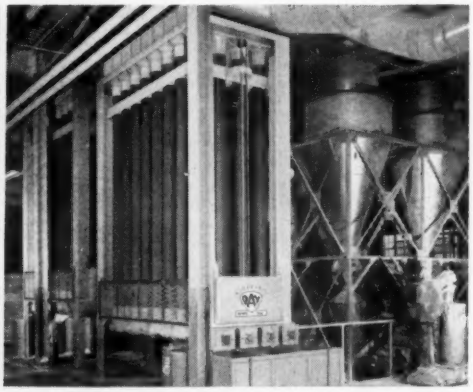


FLOUR STORAGE — Three DAY use tanks (above) for flour. This plant is also equipped with DAY horizontal tanks which have a storage capacity of 485,000 pounds of flour. DAY engineered, fabricated and installed the complete job.



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the NORTHWESTERN MILLER

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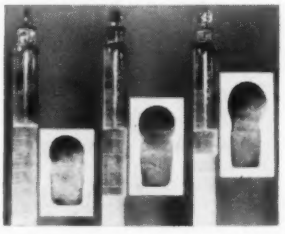

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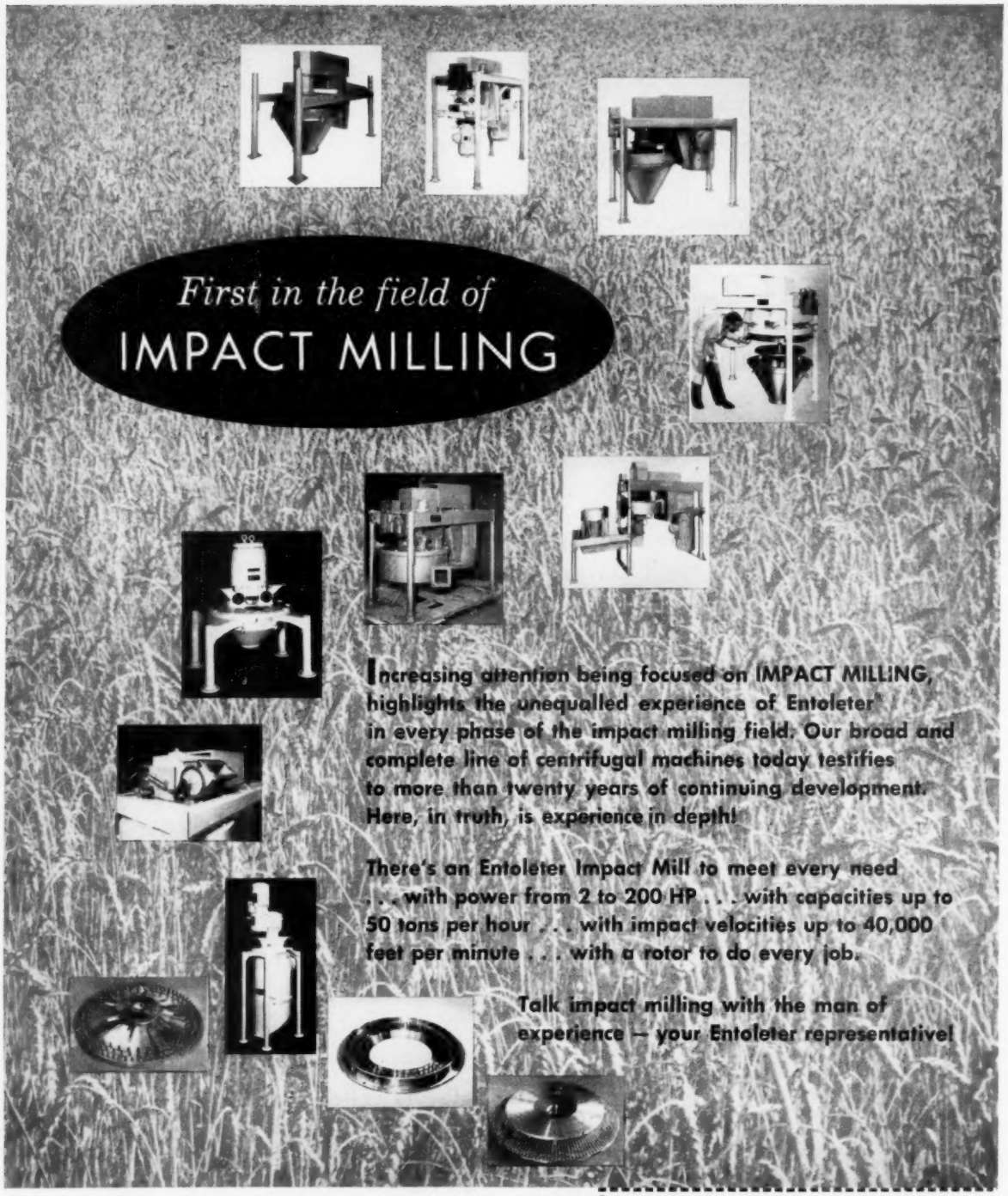
Sedimentation testing is the current topic among grain men and millers. On THE MILLER's cover is shown one aspect of the test; the higher the sedimentation in the cylinder holding a mixture of carefully measured water, lactic acid, isopropyl alcohol and wheat flour, the higher the loaf of bread.



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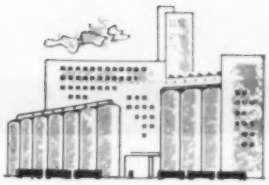
EDITORIAL OPINION



The Trouble About the Sedimentation Test

THEY HAD TROUBLE with the mike at the government-sponsored sedimentation informational and demonstrational meeting in Minneapolis recently. Robert Berglund, newly-appointed Minnesota ASC chairman, who ran the crowded meeting of traders and technologists, told one of the official team whose delivery left something to be desired: "It isn't close enough."

And from the audience came a voice: "And that's the trouble with the sedimentation test."

Trade criticism, of course, goes deeper than that, being based on technological variances that could lead to chaos in the marketing system.

There is some question in the minds of grain men and millers about the reliability of the "official" advice given Orville L. Freeman, secretary of agriculture. Has, they ask, Mr. Freeman been told everything about the test? And by "everything" they mean all the factors that make it less than desirable and less than accurate as a measure of bread baking quality.

Trade and technological reviews have already made it crystal clear that the test does not have a proven efficiency rating warranting adoption at this time.

Indubitably, the departmental heads concerned would not like to go to the bossman now and admit to erring, particularly when that erring was drawn to their attention by members of the trade they carefully refrained from consulting. And it is true that to withdraw the sedimentation test proposal now might be politically inexpedient.

On the other hand, it might mean political death for Mr. Freeman next year if the adoption of the sedimentation test results in marketing chaos. Certainly, some alert congressmen will wish to know if the experts in the trade were consulted before such a revolutionary step, involving the wheat growers, was taken . . . if Mr. Freeman's impetuosity does result in disaster.

Roland Ballou, assistant deputy administrator for commodity operations in the U.S. Department of Agriculture, had some nice things to say about his boss when he addressed the recent meeting called by the Minneapolis Grain Exchange to discuss the test. Though he admitted Mr. Freeman's knowledge of agricultural programs was meager when he joined USDA, he paid a tribute to his capacity for absorption. Having been given all the facts, he does a careful job of thinking through before making a decision, says the admiring Mr. Ballou.

But what troubles the trade most is the fear that Mr. Freeman has not been given **all** the facts by his officials, thus limiting his ability to "think through."

An integral part of these facts is the trade viewpoint, backed by the findings of the technological experts whose authority equals that of the government's own technical advisors.

We can accept, too, Mr. Ballou's assertion that the USDA team is made up of young, vigorous, dedicated people attempting to do the best for the majority. But that team does appear to have forgotten, in tendering advice to the chief, that the people making up the grain trade are equally dedicated to the welfare of U.S. agriculture and claim the right to have their views considered at the topmost level.

Mr. Freeman failed to accord them that right because of his refusal to consult with the trade prior to the announcement of the adoption of the sedimentation test.

Granted, the responsible officials made a valiant attempt to inform and demonstrate at a series of nine meetings held throughout the hard wheat areas in the first week of October. Unfortunately, these meetings were held in an atmosphere of trade resentment, a resentment engendered by the bossman himself.

Dr. Lawrence Zeleny, chief, grain division, Agricultural Marketing Service, has not spared himself and has stood up courageously to the barrage of critical questioning.

At the Minneapolis informational meeting, Paul Schrimpf, former radio and TV man of some reputation, and an ASCS information officer for the past six months, told the trade that USDA operates for the benefit of the farmer. We would take issue with him on that statement. USDA operates or should operate for the benefit of the people of the United States of America, not for any one particular group.

To have an information officer of Mr. Schrimpf's stature is a step in the right direction. His knowledge of the importance of good communications will make him a valuable member of the staff if he can persuade Mr. Freeman along the path of consultation with trade interests. The grain trade and the processing industries are as much a part of agriculture as are the farmers.

USDA must be commended for providing visual demonstrations of the sedimentation test. In Minneapolis, this task devolved upon Ed Liebe, acting officer in charge, AMS. Under a barrage of a hundred or so critical technological eyes he carried out the tests skillfully, expertly and coolly, providing an example of government cooperation that is laudable.

USDA appears set on its course. Despite the trade's misgivings and its view that a trial period is necessary before universal adoption, the sedimentation test appears to be here to stay—for a while anyway. That's why THE MILLER, in this issue, devotes some space to a presentation of the technical aspects of the Zeleny test.

Mr. Freeman is a man of many hobbies. One of the foremost collectors in Minnesota, his interests range over stamps, peace pipes, bronze statuettes, ash trays, plaques, the whole topped off with a bust of FDR. He's a devotee of all summer sports, including the water sports beloved of all Minnesotans. Perhaps his friends may be well advised to start looking for a suitable boat dock available for rent on the shores of Lake Minnetonka next summer. He may have plenty of opportunities for using it. «

INDUSTRY RECORD . . .
An account of Trade Affairs and Events

SEDIMENTATION testing is here to stay. That's the way **John Cipperly**, THE MILLER's Washington correspondent, sees it after talking with a high government source who should know. The U.S. Department of Agriculture has no intention of withdrawing despite the barrage of trade and technical criticism, he reports, commenting at the same time: "Whether traders like it or not, they will have to adjust themselves to it." Rumors that the government might delay action until the 1963 crop have been discounted and dismissed as wishful thinking.

●

Quality Tests Set For Hard Red Wheats

Sedimentation tests will be run on representative samples from each of an estimated 1,500 export cargoes of U.S. hard red spring and hard red winter wheats during the next 12 months, USDA announces. Protein tests also will be run on these cargoes. Results of the tests will be studied by the Commodity Credit Corp. and other agencies . . . but the results of tests on individual cargoes will not be published though summaries will be available for analytical purposes.

●

Doty Tests

At the government's informational meeting in Minneapolis recently, a trader asked who paid for the massive and detailed Doty tests on several thousand samples. USDA officials have quoted freely from the Doty reports in their expositions. The answer: **James Doty**, head of Doty Technical Laboratories, Kansas City, undertook and financed the survey of his own volition as a service to his customers.

●

Sands Memorial Scholarship

Walter E. Sands, president of Sands, Taylor & Wood Co., New England flour company, announces that this year's winner of the Sands Memorial scholarship is **Frank Carl Villa** of North Abington, Mass. Created in 1958 as a memorial to the late Frank F. Sands and Donald P. Sands, the scholarship consists of $1,000 to cover cost of tuition and miscellaneous expenses at the American Institute of Baking, Chicago. Mr. Villa is a baker and decorator with Martin's Home Bakery in North Abington. The three previous winners are now well established in the flour foods business—one in the bakery testing department of a large flour mill, one as an assistant production manager in a bakery and one as manager of a bakery.

●

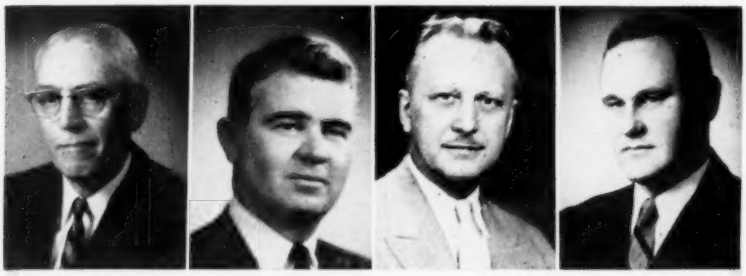
Fire Insurance and Pneumatic Mills

Millers who have installed pneumatic facilities in their plants feel strongly that their fire insurance rates should be less than those paid for conventional mills. Why? Because the risk of fire and explosion is so much smaller. The Millers National Federation has a small committee working on the task of recommending changes in the fire code for pneumatic mills. And some progress was reported at a meeting in Minneapolis recently. Members of the committee are **Fred Abbott**, General Mills, Inc., and **Douglas Hail** of the Pillsbury Co., with **Frank G. Jun** of Quaker Oats Co. as chairman.

●

Grain Trade Team Studies European Market

Grain merchandising operations in Western Europe are now under study by a five-man team from the U.S. Making the survey are **Donald E. Fraser**, Cereal Grading Co., Minneapolis and newly elected president of the Minneapolis Grain Exchange; **Charles B. Green**, F. H. Peavey & Co., Duluth, Minn.; **Lloyd Hanson**, executive secretary, Farmers Grain Dealers Assn., Fargo, N.D.; **Milton E. Neely**, executive vice president,



Donald E. Fraser | F. H. Corrigan | R. H. Hegman | C. L. McMillan

NEW PRESIDENT of the Minneapolis Grain Exchange is Donald E. Fraser, president, Cereal Grading Co. Representing shippers, he succeeds Eugene E. Quinn, Benson Quinn Co. New vice president is Charles H. McCarthy, president, McCarthy Bros. Co. and he represents the commission merchants. The exchange has three new directors: Frederic H. Corrigan, vice president of F. H. Peavey & Co., representing terminal elevators; R. H. Hegman, vice president, Kellogg Commission Co., and president R. H. Hegman Co., representing the commission merchants, and C. L. McMillan, president, Osborne McMillan Elevator Co., representing country elevators. They join a trio of veterans re-elected for two year terms: John S. Gage, director of grain operations for General Mills, Inc., who represents flour milling; Ralph C. Bagley, president, George C. Bagley Elevator Co., country elevators, and Howard A. Scheu, district manager, Spencer Kellogg division of Textron, Inc., representing the oilseed interests. Members of the board of arbitration re-elected for two years are Oscar F. Clayton, for the buyers; Emory C. Ensign, representing futures, and R. A. Morken, Hallet & Carey Co., representing selling. Members of the board of appeals elected for two years are: N. J. Kautz and D. T. McLaughlin, representing buying and J. Kenneth McCoy representing selling. Mr. McLaughlin is with the Burdick Grain Co., Mr. McCoy with Cargill, Inc.

Omaha Grain Exchange, and **Bruce O. Cottier**, Bartlett & Co., Kansas City. Overseas for three weeks, returning towards the end of October, the team will confer with millers, bakers, importers and government officials in Ireland, England, Denmark, Sweden, the Netherlands, Belgium, France, Spain, Switzerland and Germany. Purpose—developing information on the needs of Western European countries concerning types and qualities of wheat required. On their return, the grain men will make recommendations designed to improve position of U.S. wheat in the European market. Sponsors of the trip are Great Plains Wheat, Inc., and the Foreign Agricultural Service.

●

Europeans Visit U.S.

With a quid pro quo type of deal, four Europeans are taking a close look at U.S. operations, also under the initiative of Great Plains Wheat, Inc. They are **C. L. Copeland**, director of public relations for the National Association of British and Irish Millers; **Tj. Schmidt**, manager and joint owner of Lubro Bakeries, Utrecht, Holland; **Werner Steller**, executive director, Bakers and Millers Association for Market Research, Bonn, West Germany, and **W. de Groot van Embden**, marketing specialist for GPW in Rotterdam. Accompanying the party through a crowded program is **Charles H. Burch**, public relations man for GPW.

●

Interim Fiscal Report From CM&E Shows Loss

In an interim report covering the three months ended Aug. 31, 1961, Colorado Milling & Elevator Co., Denver, shows a net loss of $148,313 compared with net income of $170,817 for the same period a year ago. Sales for the latest period under review were $28,632,402 compared with $29,481,603.

●

Los Angeles Exchange Names Secretary

New secretary of the Los Angeles Grain Exchange is **Lee Girven**. He has been associated with grain and feed industry in Southern California for 22 years, and was with Spencer Kellogg & Sons of Buffalo, N.Y., for over 30 years, serving as district sales manager of Long Beach plant.

●

Retirement Status For E. O. Boyer

Edward O. Boyer, the $10 a week order and billing clerk who became a director and executive vice president of General Mills, Inc., retired Sept. 30. Last February he completed half a century of service with the company and with Sperry, the predecessor firm. (The Edward O. Boyer story appeared in THE MILLER, Feb. 20, 1961, page 16.)

●

Zinsmaster Buys

Zinsmaster Baking Co. of Minneapolis has bought the Butter Krust Toast Co., Minneapolis, a division of the Excelsior Baking Co., for an undisclosed amount. Butter Krust will operate as a wholly owned subsidiary.

●

Grain Firm Moves

New offices of Lincoln-KC Grain Co. are now at 1033 Wyandotte, Kansas City, in quarters larger than those at the old location in the Board of Trade Building half a block away, says **W. Lowell Gordon**, manager. Phone number is now HArrison 1-4670.

●

Merger Approved

Stockholders have approved the merger of the Day Co., Minneapolis, with Hart-Carter Co., Peoria. Day Co. will become a division of Hart-Carter which also has a 50% interest in Simon-Carter Co. of Minneapolis. (THE MILLER, Sept. 18, page 65.)

●

Salt Mine Suggested For Grain Storage

Studies conducted by Sampson Construction Co. and Western Grain Co. show that a mine owned by Morton Salt Co. at Weeks Island, La., could be used for grain storage. The salt mine could take 100 million bushels of grain, it is claimed. «

Baking Allied Men Elect Officers

NEW OFFICERS of the Allied Trades of the Baking Industry, elected at the annual meeting during the Baking Industry Exposition at Atlantic City, are: Miles Decker, James Decker Co., Baltimore, president; Fred Nicolai, Anheuser-Busch, Inc., Chicago, first vice president; Walter Rose, Chapman & Smith division of DCA Food Industries, Inc., Melrose Park, Ill., second vice president, and Claude A. Bascombe, Fleischmann division of Standard Brands, Inc., New York, secretary-treasurer.

First British Order For Reverse Filters Placed by Spillers

Spillers, Ltd., has ordered six reverse jet filters for dust collection from Henry Simon, Ltd., the British mill engineering firm at Cheadle Heath, England. It is the first British order for the filter, which was developed originally and patented in the U.S. by the Day Co., Minneapolis.

Spillers will use the jet filters at its Gainsborough, Lincolnshire, mill.

The Day firm has licensed the Simon organization to manufacture and distribute the filter throughout the world with the exception of the U.S. and Canada. In North America the filter is known as the Day "RJ" filter.

Said to be of simple design, the Simon reverse jet filter has only three moving parts. Dust is collected by a combination of cyclonic and filtration methods. Filter units are kept clean by a high velocity reverse air flow. «

James Mulroy Succumbs At Atlantic City

James R. Mulroy, manager of St. Louis Flour Mills, St. Louis, Mo., died at Atlantic City Oct. 9 while attending the Baking Industry Exposition and convention of the American Bakers Assn. He was 44.

J. R. Mulroy

Death was attributed to a heart attack. Mr. Mulroy complained of not feeling well the previous day and he appeared to be suffering from a digestive upset. Shortly before noon the following day, while conversing in his suite with Fred Hughes, sales manager for St. Louis Flour Mills, he suffered a recurrence. A doctor was summoned but Mr. Mulroy was dead when he arrived.

Prior to his association with St. Louis Flour Mills, an affiliate of the Colorado Milling & Elevator Co., he was with Flour Mills of America. Before that he was with Russell-Miller Milling Co., now Russell Miller-King Midas Mills, as a vice president.

Mr. Mulroy is survived by his wife, the former Suzanne Sparks, and nine children; his parents, Mr. and Mrs. M. F. Mulroy, and a brother, William T.

Mr. Mulroy, Sr., and William are associated with the operation of the Ponca Grain Co., with headquarters in Kansas City. «

Silver Anniversary at Spokane

WITH AN OVER-ALL attendance topping the 110 mark, the Pacific District of the Association of Operative Millers celebrated the 25th anniversary of its formation at the end of September. Venue of the meeting was Spokane's Hotel Davenport.

It was a working celebration with a technological program of considable merit. On hand for the event was Donald S. Eber, AOM executive vice president and the district's first secretary, and Jim Gilmore, the second chairman. Charter chairman George Walker was unable to attend because of illness but the members remembered him with a "get-well" card signed by all present.

Both Mr. Gilmore and Mr. Walker are now retired from Centennial Mills, Inc. Mr. Eber left the firm in 1948 to take up a full time appointment as secretary at AOM headquarters in Kansas City.

William A. Peters, manager of Spokane Flour Mills, was given the task of opening the meeting with a welcome from management. "But," he commented, "that's like shaking hands with yourselves because production men today are very much a part of management."

District chairman William Rowan, General Mills, Inc., Spokane, was in charge of the meeting, with William Buffum, Centennial Mills, Inc., Portland, arranging the program. And, as befits an affair that has become known as AOM's "little convention," he brought in a bevy of distinguished speakers from across the country to complete a program made up of excellent local talent.

MEMBERS AND GUESTS of the Association of Operative Millers' technical committee met recently in the new flour mill building at Kansas State University, Manhattan, with John Wingfield, Colorado Milling & Elevator Co., assuming his duties as chairman. Pictured from left to right, front row, are: C. W. Brabender, C. W. Brabender Co., guest-manufacturer; Curtis P. Lindley, Centennial Mills, Inc., Portland; David Mattson, Atkinson Milling Co., Minneapolis; Jack S. Miller, Ismert-Hincke Milling Co., Topeka; W. R. Wichser, the Quaker Oats Co., Barrington, Ill., and Alden A. Ackels, Bay State Milling Co., Winona, president of AOM. Back row: Lyle Mertz, General Mills, Inc., Minneapolis; Arlin Ward, Pillsbury Co., Minneapolis; Garland King, Kansas Milling Co., Wichita; Dewey Robbins, Fisher Flouring Mills Co., Seattle; Prof. E. P. Farrell, K-State, representing the AOM educational committee; E. S. Dybevick, International Milling Co., Minneapolis; Ernst Auer, MIAG North America, Inc., guest-manufacturer; Mr. Wingfield; Donald S. Eber, AOM executive vice president, and Dr. John A. Shellenberger, head of the department of flour and feed milling industries at K-State. Unable to attend the meeting was Tibor Rozsa, representing Pillsbury and Mr. Ward stood in for him. Also missing was T. Chris Mills of Montreal who is currently vacationing in England. The oil painting, top left, a feature of the K-State conference room, is of the late Harvey E. Yantis, former president of The Miller Publishing Co., publisher of THE MILLER. The portrait was presented to K-State by a group of friends in the feed industry as a mark of appreciation of the services rendered by Mr. Yantis.

From New Haven, N.J., came Entoleter president, Robert J. Hoskins, to talk about the proven application of impact mills in the flour milling system, a subject upon which he is well qualified to speak. Buhler Corp.'s Fritz Schiess came from Minneapolis to discuss pneumatic mills, a subject with which he has been closely connected for many years. Guenter Zimmer came from the Oakland, Cal., branch office of MIAG North America, Inc., to premier a new film on milling made at MIAG headquarters in Brunswick, Germany. The movie was well received by the members and sharing in the plaudits was the firm's vice president, Ernst Auer from Minneapolis whose recorded voice the millers heard speaking the commentary.

Winners of the district's essay competition were Allen Mulloy, Centennial, Spokane, and Howard Kirkham, Igleheart division of General Foods at Portland, Ore.

Succeeding Mr. Rowan as chairman was Mr. Buffum with Elmer Holtz, Igleheart, as vice chairman. Gil Cook, Bemis Bro. Bag Co., Vancouver, Wash., nursing an injured leg, was elected secretary-treasurer. New national executive committeeman is Curtis P. Lindley of Centennial who replaces Glen Fisher of Fisher Flouring Mills Co., Seattle.

Mr. Cook succeeds Mr. Schmidt of Centennial in the secretary-treasurer's post. His fellow officers and Mr. Eber paid a tribute to Mr. Schmidt for his services over a period of five years and the members gave him a standing ovation of appreciation.

A small trade exhibition attracted members and the allied trades combined to entertain their miller-customers. Arrangements for those affairs were in the hands of Leonard C. Nicklas, St. Regis, and Gratt Sexton, Carter-Miller Co. «

Spotlight on Spokane

In Words and Pictures
People and Personalities

Coming . . . Nov. 13

Anniversary Heralded By Modernization Program

CELEBRATING its 25th anniversary this year is Maiden Flour Mills of Newton, N.C. And the occasion was marked in no uncertain fashion by the start-up of a new plant designed and engineered by the Buhler Corp. of Minneapolis.

Because pneumatics were part of the over-all modernization scheme, Maiden has been able to come up with a smart new slogan for its brand flour, Southern Biscuit. Now the salesmen are able to claim: "Air-Lifted, Silk-Sifted, Untouched by Human Hands." And proud they are at Maiden of both flour and slogan.

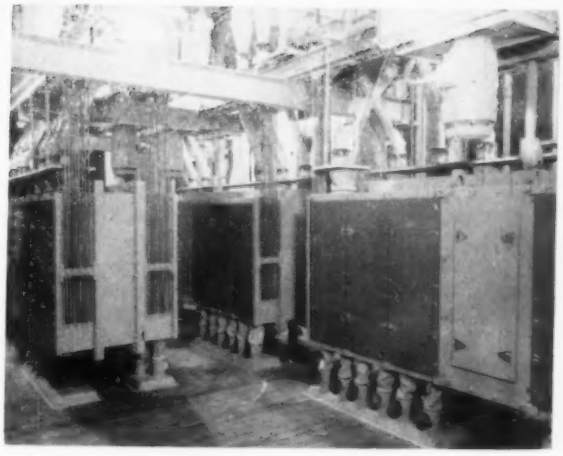
Besides bringing the greater production efficiencies associated with a modernization of this type, the new set-up has improved sanitation practices, officials of the firm state. Contributing to this was the installation of complete fabricated metal spoutings. Supervising erection of the plant for Buhler was Jacob Rechsteiner.

This major rehabilitation program demonstrates the faith in the future of the flour business shown by Maiden's president, G. D. Drum. It's the same faith that brought Mr. Drum out of the cotton gin business into flour in 1936. He has been president since the incorporation of the company in 1950.

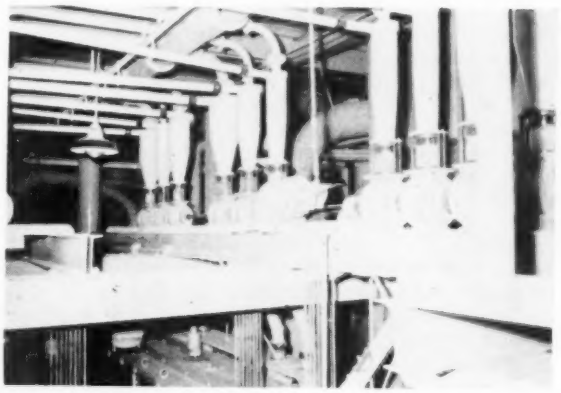
Technically, too, Maiden is in good hands for veteran Elroy Davis, well known Association of Operative Millers' member, is head miller at the plant. His experience has been wide and varied.

The new building contains a flour mill with a capacity of 900 cwt., basis 24 hours of operation and a corn mill of 400 cwt. Cleaning houses and mills in both units are equipped with Buhler pneumatic conveying systems. Also included are Buhler's purifiers and sifters together with one roller mill. Also provided were sundry other items of equipment including the Buhler multiple bin outlet.

Mr. Drum is proud of the fact that 90% of the grain used by the company is purchased locally or from areas immediately adjacent. This amounts to about a million bushels a year, a major source of benefit to sections of the farm economy in North and South Carolina. «



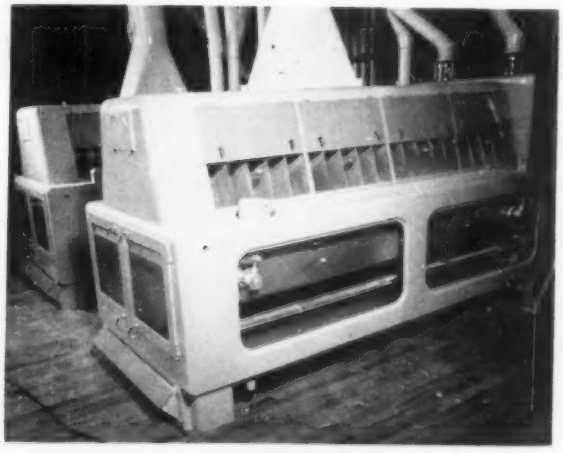
SIFTERS ON THIRD FLOOR



Cyclone receivers for pneumatic suction conveying system are installed above sifters on third floor

AOM Technical Conference, Trade Show, 1962

WORK on the 66th Annual Technical Conference and Trade Show of the Association of Operative Millers, to be held at the plush Denver-Hilton Hotel, Denver, Colo., May 14-17, 1962, is in full swing. General chairman is former AOM president (1955) L. C. Robinson, Colorado Milling & Elevator Co., with John Wingfield of the same firm as program chairman. Donald S. Eber, executive vice president of AOM, reports that 58 of the 80 available booth spaces at the Denver-Hilton have already been reserved. A technical program of high caliber is being planned by Mr. Wingfield's committee and registration is expected to break all records. Because of easy access from the West Coast, attendance by millers from that area is expected to be higher than usual.



TRIPLE DECK PURIFIERS ON SECOND FLOOR

Cost Versus Profits Crisis Pinpointed By ABA Officers at Atlantic City Show

By Ken W. Wakershauser

THE BAKING INDUSTRY'S most crucial problem — an alarming climb in production and distribution costs—and its brightest hope for the future—automation in all of its gleaming, myriad forms — were brought together in sharp contrast at the 1961 Baking Industry Exposition in Atlantic City, where all could see and hear.

Speaking on the "costs versus profits" crisis facing the industry, officers of the American Bakers Assn., holding their annual convention simultaneously with the Exposition, repeatedly issued warnings for bakers to "set their houses in order," to return to sound practices of merchandising, "or they will find more trouble in 1962."

On the brighter side, more than 375 allied firms, representing equipment manufacturers, suppliers and services, put on view for the bakers the most spectacular display ever brought together under one roof for the baking industry in the U.S., their "answer to the industry's future."

Most of the bakers, coming not only from all 50 states of the U.S., Canada and Mexico, but also from many countries overseas, were on hand early enough to see the mammoth exposition as soon as the doors opened.

The hard facts of life, which all bakers in the U.S. must recognize to solve their problems, came forth as ABA started its general sessions. They continued to break over those in attendance as each speaker advanced the program, giving his version of the industry's position internally, in the U.S. economy, and in the world's critical political picture.

John C. Koetting, Rainbo Baking Co., Houston, Texas, ABA's chairman, set the theme for crisis in his annual report, and E. E. Kelley, Jr., Butter Krust Bakeries, Inc., Lakeland, Fla., president, carried the serious nature of the situation even further.

Mr. Koetting, drawing on knowledge gained over a year of almost constant travel across the U.S. speaking to bakers, millers, wheat growers and others, opened by stating flatly, "I do not recall any time when it was more urgent than now for bakers to set their houses in order, to return their industry to a basis of sound merchandising practices."

He expressed the opinion that 1962 will hold little promise for the individual baker or for the industry as a whole if those directly concerned do not return to the time-honored practice of obtaining a fair profit on operations.

"The situation is serious, and steps must be taken to bring an end to conditions which are forcing red figures into many operations, and which have reduced profits to a ridiculously low level in others," said Mr. Koetting.

ABA's chairman drew the industry's picture of crisis rapidly and with sharp lines, then launched out for the other side—where the solutions to its problems will be found.

"There is the knowledge that our population continues to grow, and that national income is at an all-time high," he reminded the bakers. "We have the potential of an expanded market for every product we make."

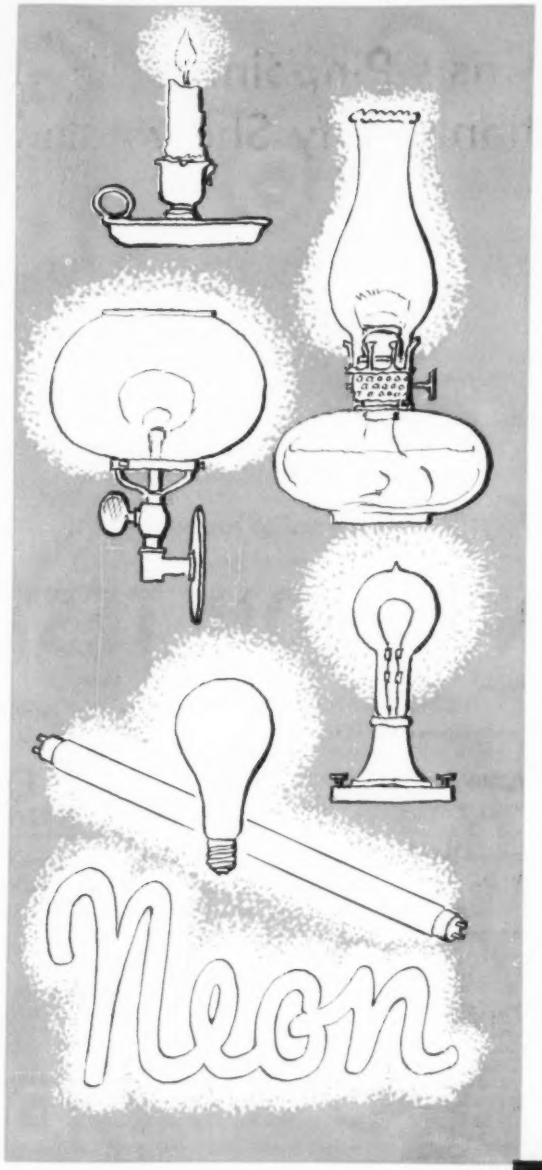
Mr. Koetting cited some of these factors for a better future as sound promotional campaigns; minute attention to every possible increase in operational efficiency; establishment of products on a fair-pricing basis, and above all a return to "the good business practices which should be the axiom of every businessman."

Mr. Kelley, in his annual report as ABA president, spoke directly on what he termed the need for "more ethical leadership" in the baking industry, particularly in areas of pricing and discount arrangements, even to making a direct approach to the Federal Trade Commission for establishment of an industry code.

Said Mr. Kelley: "Officials of FTC have indicated that they favor a national code of ethics for the baking industry. They are well aware of the conditions facing us, and they are well aware of the violations taking place daily. I believe we should be aware of the fact that unless we clean up these conditions, FTC will do it for us. True, such a code does not change the law, but it does spell out things that would be violations of the law. I believe the time has come for the baking industry to go to FTC, tell our story, and suggest an industry code that will be helpful in cleaning up conditions we have not been able to clean up ourselves."

At one point in his address, Mr. Kelley touched on the Arthur D. Little, Inc., study on the baking industry's distribution problems, a project which occupied a major share of ABA's 1960 annual meeting program. Reminding the bakers that the Little study was only a preliminary one, he expressed the view that "some of its recommendations may take place," but that "apparently most bakers believe these recommendations are not practical at this time," adding that there was only a small amount in the Little report concerning savings which could be made with present methods of distribution. «

ALL OFFICERS of ABA were re-elected at the Atlantic City meeting. E. E. Kelley, Jr., left, Butter Krust Bakeries, Inc., Lakeland, Fla., moves into his 10th year as president and John C. Koetting, right, Rainbo Baking Co., Houston, Texas, was awarded a second term as chairman. Also re-elected were: Albert S. Schmidt, Capital Bakers, Inc., Harrisburg, Pa., vice chairman; R. Newton Laughlin, Continental Baking Co., Rye, N.Y., first vice president; Jodean P. Cash, Holsum Bakeries of Puerto Rico, Inc., South Miami, Fla., second vice president; Edwin G. White, White Baking Co., Indianapolis, treasurer. And one of the top men spearheading the Exposition—Harold Fiedler — continues as secretary.



LIGHT . . . *and the* CHANGING YEARS

For hundreds of years our forefathers used candle light and whale oil lamps to light their homes and when gas came along it was hailed as the ultimate in illumination.

Mr. Edison changed all that when he invented the incandescent lamp and a method of distributing electricity economically.

Today we accept the latest refinement in stride without realizing how far we have come in the last century.

Our forefather millers used SWISS SILK for bolting their fine flour and their grandsons and great-grandsons are still using that good SWISS SILK sifting cloth, for no other textile, to date, has been able to do a better job.

"When you find a good thing, stick with it" has been the miller's motto for SWISS SILK for over a century.

BODMER

DUFOUR

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Here—in one convenient package—everything you need to make the

ZELENY SEDIMENTATION TEST

The accuracy of your sedimentation tests depends greatly on the type of equipment you use. That's why Seedburo, leading supplier of grain testing and grading equipment, is offering this complete sedimentation testing kit made to exacting technical standards.

It gives you everything you need, along with complete instructions, to make reliable individual sedimentation tests in 18 minutes or simultaneous tests in an average time of about 5 minutes each.

All major components are specially constructed of heavy gauge steel and strong aluminum alloys to precision tolerances. They give you the added advantage of built-in reliability and long-life, trouble-free operation.

Operation is simple and eliminates the possibility of human error. Results are reliable and accurate regardless of who operates the equipment.

The complete kit includes . . .

ELECTRIC SIEVE SHAKER—Provides correct sieve speed and motion specified by the U.S.D.A. Heavy-duty ¼ H.P. motor operates on 110 V., 60 cycle power. Precision bearings for quiet and trouble-free operation. Durable heavy gauge steel cabinet of grey hammertone finish. Time switch assures precise sieving.

ELECTRIC CYLINDER MIXER—Designed to meet U.S.D.A. specifications for rocking speed and angle. Cylinders may be inserted or removed while rack is in motion. Accommodates **all approved types** of graduates and assures a minimum of breakage. Steel and aluminum construction, plus adequate bearing surfaces, make for exceptionally long life. Finished in easy-to-clean grey hammertone.

TAG-HEPPENSTALL GRINDER—Motor driven corrugated steel rolls grind each sample. Use with ordinary 110 V., 60 cycle power.

U.S. STANDARD SIEVE NO. 100—Woven wire cloth with cover and pan.

BALANCE—.001 gram sensitivity. Complete with weights.

GRADUATED CYLINDERS—Set of eight precision graduated cylinders. Glass-stoppered.

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ECONOMICS OF WHEAT AND FLOUR:

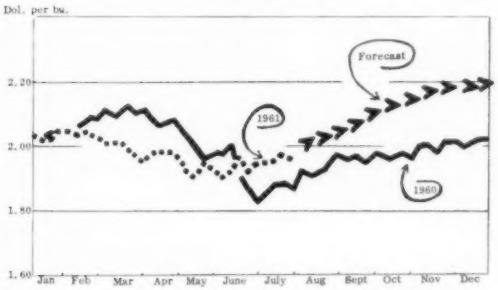
Watch for Higher Wheat Prices Ahead

By DR. LEONARD W. SCHRUBEN
Agricultural Economist, Kansas State University

AS WE NOW KNOW, wheat prices during the summer were higher than a year earlier—they didn't go as low as we forecast late in June. Prices now are expected to reach higher levels in December than was indicated earlier.

A combination of forces favorable to higher price levels has developed, with Congressional action to reduce production and increase supports the big factors. Premiums paid in the market for high quality wheat have shown the need for growers to produce wheat having desirable milling and baking characteristics. And, of course, drouth cut production of spring wheat.

FIGURE 1



WHEAT: No. 2 hard red, ord. prot., Kansas City cash price, 1960 and 1961.

You can get an idea how prices have gone up and down so far in 1961 compared with a year earlier by looking at Figure 1. Prices this year did not fall as low as they did last year, with the low point coming in early June.

This chart also indicates what we expect regarding the wheat price pattern for the rest of this year. Seasonal movements are expected, only on a higher level than a year earlier.

To give you an idea on seasonal price changes, we indicate in Figure 2 the percentage of times prices have gone up, stayed the same or gone down from September to November to January and to March.

Here is how to read this figure: The top part of the bar in the first column, for example, indicates the percentage of times prices went up from September to November. In this case note that it is 100%. This means that every year since 1947 prices have been higher in November than in September.

The bottom part of the bar shows the percentage of times prices went down. From September to January, as you can see, prices went down 8% of the years in the period. Changes from September to March are read in the same manner as the other months.

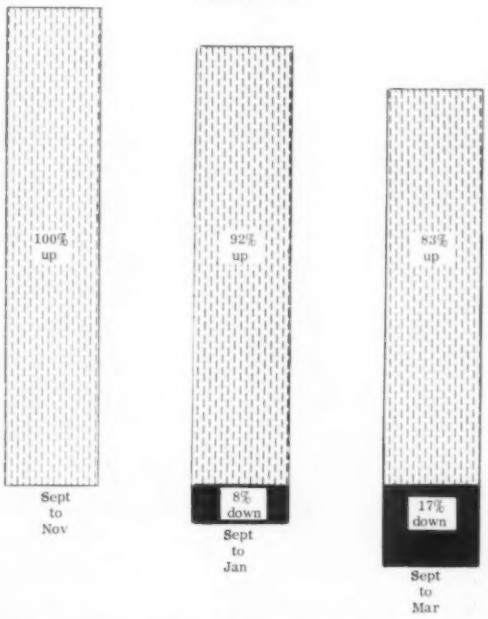
You can see from Figure 2 that there is a strong upward push to prices from September through the winter months.

It has been a year of uncertainty, with many possible trouble spots. All the surplus problems haven't been solved, but a further reduction in acreage can be expected as farmers cooperate in the government program to stop the build-up in wheat supplies. Let us hope it isn't overdone.

Drouth in the spring wheat area of the U.S. and extending into Canada has given a boost to prices. Harvest of the smallest spring wheat crop in the U.S. since 1936 has been completed. With the small spring wheat crop and a smaller winter wheat crop than a year ago, carryover in free market channels could be taken up. If this turns out to be the case, prices will increase to the price charged for government wheat.

The uncertain international situation also has created price problems. During periods of international tension, crops which may appear to be in surplus at one time can almost overnight be regarded as valuable assets. The drouth extending into the Canadian wheat producing area demonstrates that no nation can completely assume it will always have a large and surplus supply of wheat. Of course, a substantial reserve of wheat should be kept in years of uncertainty such as the world is going through at the present time. Therefore, all of the carryover supplies are not all surplus. «

FIGURE 2



WHEAT: No. 2 Hard Winter, Kansas City price changes, 1947-59.

How to . . .

A Milling Technology Feature

Run Sedimentation Tests

EQUIPMENT, APPARATUS REQUIRED

Balance, general laboratory, sensitive to 1 mg.
Balance weights
Bottle, aspirator, with tubulation, 2 gal. (2)
Bottle, large, 2 gal.
Brush, camel's hair
Brush, paint, 2 in.
Cylinders, glass stoppered, 100 ml graduated having a distance of 180 to 185 mm between the zero mark at the bottom and the 100 ml mark at the top
Cylinder Shaker
Disconnect, quick*
Flask, volumetric, 500 ml
Flask, volumetric, 2 liter
Funnel, powder, 65 mm
Funnel, powder, 150 mm
Funnel, utility, 5 in. (2)
Ointment Tins, 8 oz. (3 doz.)
Pinch Clamp (2)
Pipet, automatic, dual chambered, 25 ml
Pipet, automatic, dual chambered, 50 ml
Rolls, steel, corrugated, motor-driven
Scoop and Tare, 30 ml
Sieve, 100-mesh (U.S. Standard No. 100 woven wire cloth) 8 in. in diameter, equipped with bottom pan
Sieve Shaker
Stopper, Leash, medium size (16)
Stop Watch or Interval Timer
Test Tube Brush, nylon
Tubing, size 6 (8 ft.)
Y Tube, 5/16-in. diameter (2)
Backing for pipet made from Masonite board
Drying Rack to hold cylinders by the foot in inverted position

*One half to be inserted to tubulation of aspirator bottle to provide small diameter hose connection.

PROCEDURE

MORE AND MORE PEOPLE in the grain trade will be required to operate the Zeleny sedimentation test if the government proceeds with its plans to introduce it for the 1962 crop. And more and more grain traders will find their financial operations affected, up or down, by the results shown. The operator, the U.S. Department of Agriculture claims, does not need to be a qualified cereal chemist and any person with common sense and a facility for accuracy can run the test. But only by following the procedure laid down, without the slightest deviation, can maximum efficiency be attained. The possibility of human error, even human frailty, has been cited by the critics as a source of danger for the grain trade. Here the procedure adopted by the American Association of Cereal Chemists and published in "Cereal Laboratory Methods" is presented for the information of those who will be directly concerned with the sedimentation test, operationally or financially. Details of the apparatus, equipment and reagents required have been compiled from information published by AACC and USDA.

• • •

(1) Grind about 200 g of wheat by passing it five times through the motor-driven rolls adjusted to a clearance of 0.023 inch and turning at about 30 r.p.m. If Tag-Heppenstall moisture meter rolls are used, this clearance is attained by using the flaxseed shims. The wheat used for this purpose may be that upon which a moisture test has been made with the Tag-Heppenstall moisture meter.

(2) Place the ground wheat on the 100-mesh sieve equipped with bottom pan and shake by hand or mechanically for 1½ minutes. The shaking should be done with a horizontal circular motion in such a way that any point on the sieve will describe circles about 2 inches in diameter at the rate of about 200 per minute. If the shaking is done by hand, set the sieve assembly on a smooth, level surface and move as described. The yield should be about 25 g.

(Note: Be **certain** the sieve is **clean** before using.) The material passing through the sieve is essentially a white flour and is used for the sedimentation test. The flour must be thoroughly mixed before testing.

(3) Place 3.2 g of the flour to be tested in a 100 ml glass-stoppered graduated cylinder.

(4) Simultaneously, start the timing and add 50 ml of distilled water containing bromophenol blue. Mix thoroughly the flour and water by moving the stoppered cylinder horizontally lengthwise, alternately right and left, through a space of 7 inches, 12 times in each direction in 5 seconds. The flour should be completely swept into

REAGENTS

(1) Isopropyl alcohol 99-100% N. F. or equivalent.

(2) Distilled water containing 4 mg of bromophenol blue per liter.

(3) Lactic acid stock solution. Dilute 250 ml of U.S.P. 85% lactic acid to 1 liter with distilled water. Reflux the diluted acid 6 hours without loss of volume. (See Note 2.)

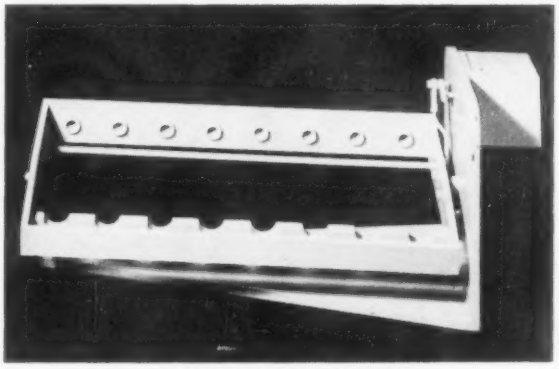
(4) Mix thoroughly 180 ml of the lactic acid stock solution (reagent 3), 200 ml of isopropyl alcohol (reagent 1), and distilled water to make 1 liter. Let stand 48 hours before using. Protect against evaporation.

Strand Shaker Equipment

For Sedimentation Test

Strand Shaker equipment is in use by both Government grading laboratories and private industry. The Strand equipment, specifically and carefully designed for the new sedimentation test, fulfills official requirements. To meet exacting standards of performance, quality and economy—

SPECIFY STRAND SHAKER EQUIPMENT!

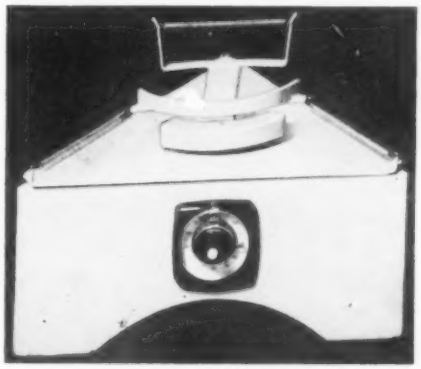


STRAND CYLINDER SHAKER

- Triangular base for greater stabilization—Rubber shock mounted
- 40 RPM fractional H.P. gearmotor direct drive—110 volt 60 cycle AC
- Crankshaft actuation—designed for balanced shaker rack when loaded with cylinders
- Cylinders held securely in shaker rack by self-centering, spring-actuated sockets designed to fit over cylinder stoppers
- 40 cycles per minute oscillation speed
- 60° rocking motion—30° each way from horizontal
- Cylinder rack and base of carefully fitted wood construction specifically designed to provide greater cushioning effect and resilience than afforded by use of steel. Reduces cylinder breakage hazard

- Triangular base for greater stabilization—Rubber shock mounted
- 200 RPM fractional H.P. gearmotor direct drive—110 volt 60 cycle AC
- Counter-balanced table—equipped with thrust bearing
- Simple spring hold-down for sieve assembly prevents rattling or vibration—sieve assembly can be instantly removed and replaced
- Built-in precision automatic reset timer, accurate to 1/10th second to provide 300 oscillations over 90-second interval
- All-steel construction (glassware breakage is not a factor since there is no direct contact)

ALL EQUIPMENT FULLY WARRANTED



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Complete Sedimentation Test Kits Available

TABLE I

Wheat Moisture %	Factor	Wheat Moisture %	Factor	Wheat Moisture %	Factor
8.0	1.14	11.0	1.00	14.0	1.00
8.5	1.10	11.5	0.99	14.5	1.02
9.0	1.07	12.0	0.98	15.0	1.04
9.5	1.05	12.5	0.98	15.5	1.07
10.0	1.03	13.0	0.98	16.0	1.10
10.5	1.01	13.5	0.99		

TABLE II

Time shown on stop-watch or interval timer, minutes and seconds

Sample	Add water	Mix for 30 secs.	Add acid, mix 4 times	Mix for 30 secs.	Mix for 15 secs.	Set up	Read
1	0:00	2:00	4:00	6:00	8:00	8:15	13:15
2	0:30	2:30	4:30	6:30	8:30	8:45	13:45
3	1:00	3:00	5:00	7:00	9:00	9:15	14:15
4	1:30	3:30	5:30	7:30	9:30	9:45	14:45

suspension during the mixing.

Proceed with steps 5, 6 and 7 (mechanical mixing), or 5a, 6a, and 7a (hand mixing).

Mechanical Mixing

(5) Place the cylinder in the mixer and mix for 5 minutes.

(6) Remove from the mixer, add 25 ml of the isopropyl alcohol-lactic acid reagent, and mix in the mixer for 5 minutes.

(7) Remove from the mixer. **Immediately** place the cylinder in an upright position and let stand for **exactly** 5 minutes.

Hand Mixing

(5a) At the end of the first 2-minute period (see schedule, Note 3), mix the contents for 30 seconds in this manner: Completely invert the cylinder, then right it, as if it were pivoted at the center. Perform this action smoothly, exactly 18 times in the 30 seconds. Let stand 1 minute and 30 seconds.

(6a) Add 25 ml of the isopropyl alcohol-lactic acid reagent, mix immediately by inverting the cylinder four times, as in 5a. Let stand 1 minute and 45 seconds.

(7a) Mix for 30 seconds as in 5a, let stand 1 minute and 30 seconds. Again mix for 15 seconds and **immediately** place the cylinder in an upright position and let stand for **exactly** 5 minutes.

(8) At the end of 5 minutes, read the volume in ml (estimating tenths of a milliliter) of the sediment in the cylinder. This is the uncorrected sedimentation value.

(9) To obtain the corrected sedimentation value (14% moisture basis), multiply the uncorrected sedimentation value by the appropriate factor in Table 1. (Note: The moisture content of wheat when ground as above partly determines the content of ash and of protein in the resultant flour. Ash and protein, in turn, influence the sedimentation result. The factors in the table are designed to compensate for variations in moisture content and to correct the sedimentation values to the 14% moisture basis.)

Notes

(1) The sedimentation test reflects differences in the quantity and quality (from a bread-baking standpoint) of the gluten in the wheat (or flour) and hence is a rough measure of baking strength.

(2) Concentrated lactic acid normally contains associated molecules which on dilution gradually dissociate in part until a state of equilibrium is reached. Attainment of equilibrium after dilution, which is necessary for consistent sedimentation test results, is greatly hastened by refluxing. The refluxed stock solution should be about 2.78 normal. The mixed reagent is approximately 0.5 normal and contains 20% of isopropyl alcohol.

(3) If suitable automatic pipettes are used for dispensing solutions, the tests may conveniently be run in groups of eight. The pipettes should empty and refill in slightly less than 15 seconds. If manual pipettes are used, they should be fast-flowing. Ordinary pipettes usually flow too slowly. The tips may be trimmed with a file so each pipette drains in about 5 seconds. It may be desired to run the tests in groups of four. The schedule in Table II may be used.

Each operation is to be started at the indicated time. If it is desired to run eight in a group, 15-second intervals must be used in making the schedule, and it is necessary to mix two samples simultaneously for the 30-second mixes. One of each pair will be 15 seconds off schedule. A different schedule is necessary for use with a mechanical mixer.

Deviations of 10 to 15 seconds during the steps 4 through 7 (or 7a) are not serious. It should be emphasized, however, that the reading of the uncorrected sedimentation value (step 8) must be made **exactly 5 minutes after the final mixing.**

(4) In applying the above procedure, the line of demarcation between the sediment and the supernatant liquid in the cylinder is ordinarily sharp and distinct, so that readings may be made directly to the nearest ml and estimated to the nearest 0.1 ml. Duplicate determinations of the sedimentation value (ml of sediment after 5 minutes of settling) usually agree within less than 1 ml. The temperature of the reagents within the range of 20-30° has little effect on the results. The 5-minute period of settling must also be very accurately timed, since at this stage sedimentation is still progressing at a fairly rapid rate. Readings taken at longer time intervals show smaller differences between wheats of good and poor baking quality; readings at shorter time intervals tend to be somewhat erratic. Sedimentation values can be expected to range from 20 or less for low protein wheat of inferior bread-baking strength to as high as 70 or more for high protein wheat of superior bread-baking strength.

Mechanical Mixers

Mechanical mixers, in general use in many laboratories, are available on the market. The mixer consists of a rack measuring about 23 inches long, by 12 inches wide and two inches deep. It is pivoted at the center of each end and oscillates through 60 degrees, 30 degrees each side of horizontal position, at the rate of about 40 times per minute. The rack is so designed that a number of graduated cylinders can be quickly and securely placed while the mixer is in motion. Power is supplied by a small electric motor. «

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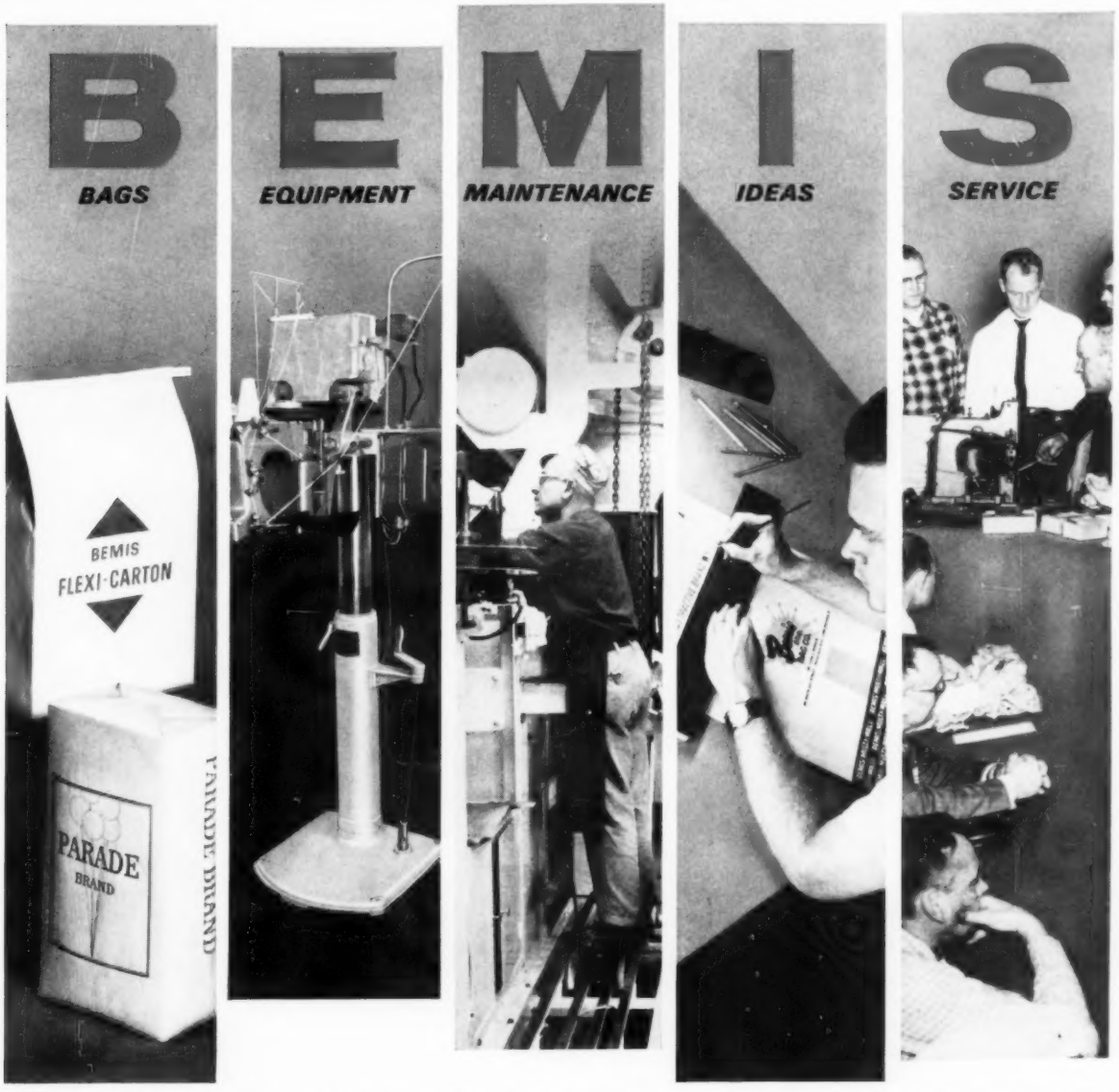

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	Bin 12 New Crop	Bin 14 Lot 122	Bin 28 Blend	Bin 25	Bin 27 Lot 63	Bin 16	Bin 15 Lot 81	Mixture Actual	Mixture Computed
Wheat:									
Ash	1.68	1.44	1.61	1.62	1.58	1.47	1.7	1.55	1.59
Moisture	12.00	11.4	11.8	12.2	11.8	12.2	11.8	11.9	11.91
Protein	12.96	12.93	12.05	14.23	11.97	12.67	14.01	12.87	12.97
Sedimentation	46.8	41.2	34.8	60.8	37.2	46.8	62.7	41.2	47.48
Flour:									
Ash	.50	.394	.49	.514	.42	.449	.479	.499	.467
Moisture	12.8	12.3	12.9	12.7	12.8	12.2	12.6	12.6	12.6
Protein	11.60	11.23	10.77	13.31	10.64	11.22	12.54	11.94	11.64
Maltose	195	122	179	211	118	108	159	191	158
Protein recovery	89.5	87.0	89.3	93.5	88.8	88.5	89.5	92.7	89.5
Farinograph:									
Absorption	60.8	57.7	59.4	63.3	56.2	55.8	59.7	61.9	59.1
Peak	6	5.75	6	6.5	5	5.25	6.5	6	5.86
Tolerance	6.25	7	6	9.75	7.75	8.75	9.25	7.5	7.86
Initial drop	9	9	8	12	9	10.75	11.5	9.5	9.93
20-Min. drop	107	110	108	75	105	100	75	100	96.5
M. T. I.	53	50	63	30	53	48	40	40	48
Valorimeter	60	58	60	64	57	57	62	60	59.8
Four-Hour Fermentation:									
Peak	2.25	2	2	6.25	2.5	2.0	2.75	3.0	2.86
Top	98	33	75	27	30	33	45	60	49.5
Bottom	—20	+25	—10	+40	+27	+25	+30	+10	+16.3
Mixing time	7.0	14.5	6.0	15.5	15.0	13.0	10.25	10.25	11.4
Dough:									
Absorption	63.0	60.8	61.4	65.6	58.4	59.0	62.2	64.4	61.5
Mixing time	4–2	4–5½	4–2	4–7	4–6	4–5	4–4	4–4½	
Character	good	good	good	good	good	good	good	good	
Bread:									
Volume	good	good	good	good	good	good	good	good	
Grain	fair	good	fair	good	good	good	good	good	
Crumb color	92C	95C	93C	94C	96C	98C	95C	94C	94.7
Crumb strength	fair	good	good	good	good	good	good	good	
Crumb texture	fair	good	fair	good	good	good	good	good	
Score	88.6	92.3	89.8	91.6	93.0	94.2	92.5	92.6	91.7
Quality	fair	good	fair	good	good	good	good	good	
Acceptable Wheat Rate:									
1—2—3—4	4	1	3	1	1	1	1	1	

	Identifications	Protein	Valorimeter	Tolerance	M.T I.	Ferm. Curve	Bread Score	Sedimentation Test
Burrus Samples								
	Lot 131-B	13.55	60	6¾"	38	+42	92.2	42.6
	Lot 132-B	15.14	65	7"	40	+40	91.5	64.3
	Lot 135-B	12.43	60	7½"	48	+13	90.8	40.5
	Lot 140-B	12.51	60	7¼"	45	+20	92.0	40.6
	Lot 144-B	12.66	47	4¼"	60	—30	90.0	39.1
Burrus Sedimentation Blends								
	50%—Lot 132-B	64.3	50%—Lot 131-B	42.6	50%—Lot 144-B	39.1	50%—Lot 132-B	64.3
	50%—Lot 144-B	39.1	50%—Lot 135-B	40.5	50%—Lot 135-B	40.5	50%—Lot 140-B	40.6
	Average	51.7	Average	41.5	Average	39.8	Average	52.5
	Ran	50.9	Ran	42.6	Ran	41.1	Ran	53.8
Morten Samples								
	5 Mix-Bin 20	12.25	54	6"	60	— 7	90.2	38.1
	Bakers Mix-Bin 18	13.00	58	8"	40	+12	91.9	39.2
	5 Mix-Bin 24	11.50	53	7¾"	52	—12	89.6	36.1
	Spring-Bin 26	14.12	74	10½"	35	+50	93.7	63.7
	Lubbock New-Bin 12	13.50	63	8¼"	43	+40	91.9	48.0
Morten Sedimentation Blends								
	50%—Bin 26	63.7	50%—Bin 12	48.0	50%—Bin 26	63.7	50%—Bin 24	36.1
	50%—Bin 24	36.1	50%—Bin 20	38.1	50%—Bin 12	48.0	50%—Bin 20	38.1
	Average	49.9	Average	43.0	Average	55.8	Average	37.1
	Ran	49.5	Ran	41.6	Ran	56.8	Ran	38.7

How . . . Millers, Bakers See New Sedimentation Tests

By Richard D. Zumwalt

ACTUALLY, THE TITLE of this presentation is a misnomer; the test is not something new which was developed yesterday; in fact, many cereal chemists have been working with it for the past several years; and, like many other things, it has some good characteristics and some not so good.

To understand its purpose we should go back to the miller of yesterday. He didn't have elaborate laboratory equipment facilities to tell him which wheat was suitable for family flour and which was suitable for bakery flour, so he made his selection simply by chewing a few kernels of each lot to test the gluten. The strong gluten was put aside for bakery, while the weak went to family flour.

Later on, cereal chemists related gluten **quantity** to the measurement of nitrogen in wheat. While the test indicated quantity of gluten, it did not tell the quality of the gluten, so further tests became mandatory. More than 20 years ago, most mills were using machines to ascertain gluten quality, and this is true today.

It will be of interest to study the information appearing in the table opposite. In the first part will be found 30 points of observation which are usually made for the selection of wheat—**one** of these tests being sedimentation. Obviously, some of the factors weigh very heavily and others hardly at all. The information covers seven lots of wheat used in varying percentages to build a mill mix from which a particular type of bakery flour was produced. Actually, with today's high speed bakeries producing many different types of breads with different methods, it has become necessary for the flour mills to supply flours with specific characteristics for those particular bakeries. This particular mix would be considered not exceptionally strong, but it was designed and manufactured for a specific baker, and it suits him perfectly. We were surprised when we found the sedimentation grading of this particular mix to actually run 41.2, whereas a weighted average of the individual wheats was 47.48. This, no doubt, is an unusually wide variation, because it will be noted in the lower part of the table that various blends of only two wheats checked within a two-point margin.

When the program of incorporating sedimentation tests into next year's wheat loan program was announced, it was without prior consultation with the milling industry; and the Millers National Federation has been working diligently in an effort to learn the answers to a number of questions:

QUESTION NO. 1—How accurately can the test results be reproduced? Under ideal conditions, what is the margin of error that can be expected?

The answers are best found by referring to Dr. Walter T. Greenaway's report to the American Association of Cereal Chemists. He tells of difficulties in checking between collaborators. Everything must be exact in order to check within two points, and low moisture wheat sometimes gives erratic results. Under ideal conditions our laboratories can usually check within two points; if they are further away than this on the first run, they can go back, do it all over again and, possibly, get within the two-point tolerance—but it isn't easy.

QUESTION NO. 2—What effect does storage of a year or longer have on sedimentation values?

We have no specific knowledge; however, I personally would rather doubt that the storage period would affect it to any appreciable degree.

QUESTION NO. 3—What correlation, if any, is there between sedimentation values and baking quality as measured by the baking tests?

I am afraid there is very little correlation. One of the large milling firms told me they had sent a statistical organization in Chicago the detailed results determined by their mill laboratory on more than 1,000 samples, and asked the organization to correlate sedimentation values to baking quality. It was reported back to the milling firm that in order to find a correlation, the factor would have to be 0.5 or higher, and in the case of the 1,000 samples, they came up with a factor of 0.4, thus resulting in the statement that there was no correlation between baking quality and sedimentation values.

QUESTION NO. 4—Since USDA has decided to use sedimentation values, from a practical standpoint where should premiums begin? Where should discounts begin?*

This is the hot one! From a practical standpoint, where should premiums begin and where should discounts begin? From the information floating around, I have heard some people advocate premiums beginning at 40 and, possibly, applying on increments of 5 running up through 60. I have not heard anyone suggest discounts below 40, other than one miller who advocated a discount of 10¢ bu. on mellow varieties of wheat, which presumably would fall in the lower-than-40 category.

QUESTION NO. 5—If, for instance, premiums start at 40, what should be the increment between upward or downward graduation of a premium or discount scale?

This question is closely related to No. 4, and that's where the heat is really encountered. What should the

*EDITOR'S NOTE—Since this paper was written, USDA has announced the schedule. See box on page 25.

Mr. Zumwalt is executive vice president of Burrus Mills, Inc., Dallas, Texas. He is also vice chairman of the Millers National Federation. His paper was part of a presentation at a meeting of the Texas Grain & Feed Assn. at Fort Worth, Texas, recently.

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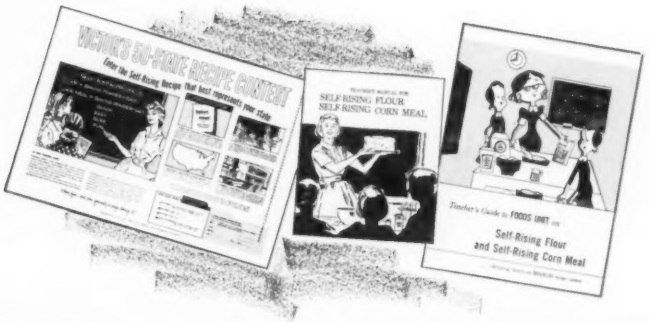

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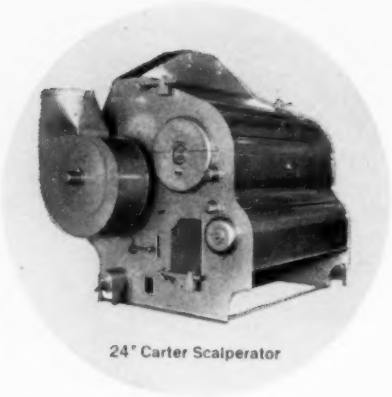
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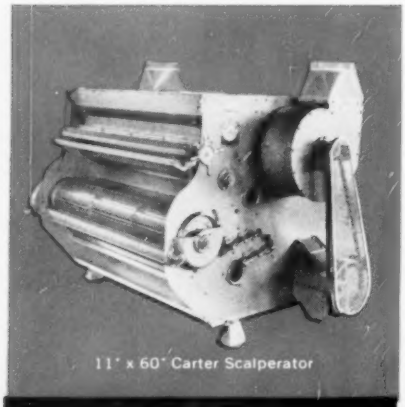
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premiums be? As a miller and as a supplier to the baking industry, we have the obligation to furnish the product at a cost as reasonable as possible, so that the baker, in turn, may supply the consuming public with a product within the reach of everyone. We have had protein premiums applicable to loan values for many, many years and, no doubt, some wheat producers have received premiums beyond value, while other wheat producers have failed to receive full value for the quality wheat they produced.

We, as millers, are heartily in accord with the principle of paying for quality. This, of course, is indicated by the spreads applicable to various wheats, as the high side and the low side for the particular protein wheat involved. In periods of abundant protein, these premiums are relatively low. This year, with the scarcity of protein, they are extremely high. Still, the fact that there are high and low premiums indicates that someone is willing to pay for quality.

The impact on the milling industry would be negligible if sedimentation loan value premiums were determined at a level not higher than the present loan or support protein scales. A discontinuance of protein premiums could then be accomplished in 1962, and sedimentation values substituted without causing extreme confusion; not only within the milling industry, but also, within the grain trade as well. This is a personal observation and does not necessarily represent the view of the milling industry, nor anyone else.

QUESTION NO. 6—With the present knowledge available to your company, do you think your grain department will be able to buy wheat on the basis of sedimentation values?

This question, I believe, can be answered in the affirmative. Yes, the grain department can buy wheat on the basis of sedimentation values; but there will be other factors considered on each lot if it is destined to the milling department. For all practical purposes, wheat purchased for the milling of bakery flours is presently bought on sample. The laboratory analyzes it and, if it fits, the grain department is instructed to buy it. Regardless of its sedimentation value, the laboratory will still run proteins as long as flour specifications call for specific proteins, and I doubt that the entire world trade in wheat flour will discontinue protein specifications for a long time.

In conclusion, sedimentation tests, even with their higher laboratory costs

and, sometimes erratic results, must be accepted. The test has merit when considered in the light of its limits; however, I doubt that anyone in the trade presently considers the test more than an indication of wheat quality. If discretion is used in the application of loan premiums applied to sedimentation values, I believe the change will be most beneficial. «

PREMIUMS

USDA has announced the premium scale under the 1962 price support program ranging from three to 24c bu. for varying quantities of hard red spring, hard red winter, and hard white wheat as measured by the sedimentation test. Premiums are provided for wheats with baking quality values of 40 or above on the quality scale. Hard wheats with no test or testing below 40 will be supported at the basic loan rate for the county under the 1962 program. For the higher quality wheats, premiums indicated in the attached schedule will be added to the basic county loan rate to determine the support price.

Baking Quality	Premium Cents per Bushel
40-44	3
45-49	6
50-54	10
55-59	14
60-64	19
65 and over	24

Under previous price support programs, premiums for protein content from 11 to 17% ranged from 1 to 12c bu., with additional premiums for content over 17%.

MILLING COURSE BEGINS

The Swiss Milling School at St. Gallen has started its fifth course, with students represented from Argentina, Colombia, Germany, Finland, Greece, India, Mexico, Austria and Switzerland. During the fall, there will be a three-day advanced training course for head millers, and from Nov. 20 to Dec. 15 the school holds a seminar for operational managers and macaroni industry personnel, additional to the normal curriculum. «

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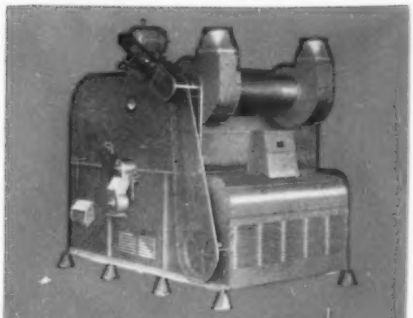

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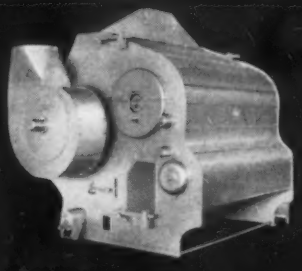

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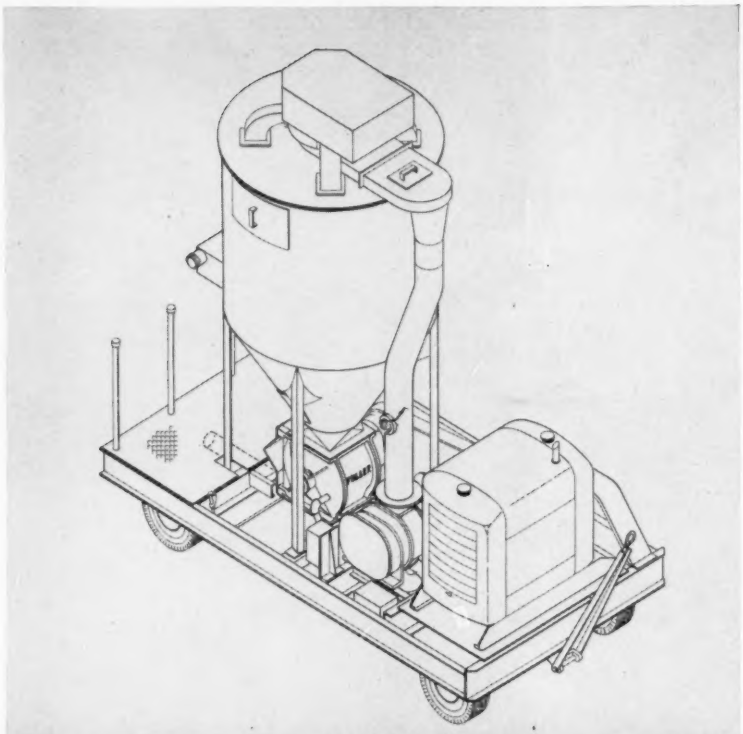

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Speaker Tells AACC Section of Advances Made in Instrumentation

Joint use of gas chromatography and infra-red spectrography as "tools" of measurement was the subject of a presentation by Robert J. Manning, regional application engineer, Beckman Instruments, Inc., at the September meeting of the Northwest Section, American Association of Cereal Chemists.

The title of his talk was "Some Recent Advances in Analytical Instrumentation and Their Application in the Food Industry." It was accompanied by slides showing the use of various processes in the measurement of both the quantity and quality of chemicals.

Mr. Manning cited gas chromatography as a "good quantitative tool," but lacking qualitative measurement. He then showed use of the process with spectrography to provide this qualitative measurement.

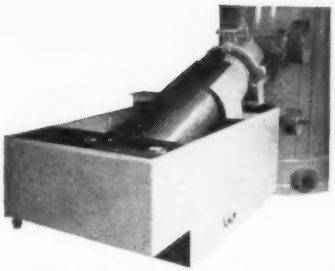
In his address, Mr. Manning referred to use of gas chromatography as "the fastest to rise" of all analytical techniques developed within the past few years, reminding his audience that 10 years ago the technique was just being discovered. Regarding infrared spectrography, Mr. Manning expressed the view that, although it is one of the oldest techniques available, its usage is really just getting underway.

Ray H. Anderson, General Mills, Inc., chairman of the section, presided. Sheldon I. Greenberg, the Pillsbury Co., vice chairman, was in charge of the program. He also issued a reminder to members of their annual dinner meeting to be held at the Dyckman Hotel, Minneapolis, Dec. 15. The dinner will be preceded by a social hour for members of the section and their ladies, through the courtesy of allied firms.

The September meeting of the section was held at the Tempo Restaurant, Minneapolis. «

'FLAVOR BOOSTER' PROCESS

Commercial Solvents Corp., New York, has obtained exclusive rights to a patented microbiological process for making the flavor-booster, monosodium glutamate, says Maynard C. Wheeler, president. Two major units of the firm's biological production facilities at Terre Haute, Ind., are being converted and expanded to make the product in commercial quantities, with the firm expecting to be a major U.S. producer by June of 1962. «



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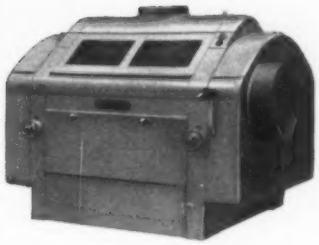

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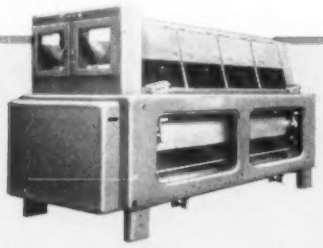

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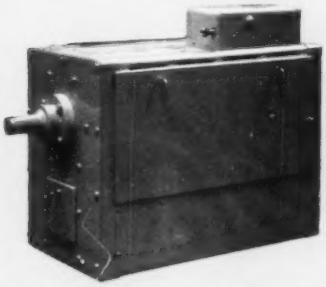

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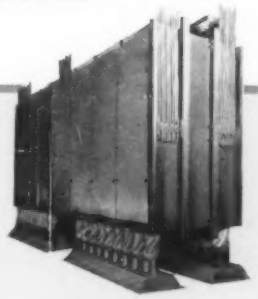

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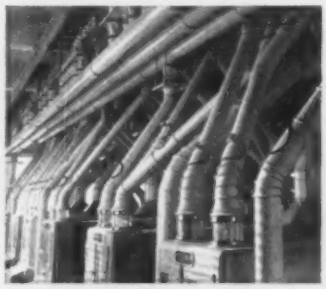

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Part XV

The Flour Milling Industry

An Economic Study of Excess Capacity

By Dr. Donald A. Markwalder

WE HAVE SHOWN how capacity has changed over the years in the important U.S. milling regions. It can be seen that the long-term capacity trend in almost every region has been declining despite construction of large, new capacity in favorably located sites of almost every region.

This long-term decline tends to substantiate existence of excess capacity—a situation worsened by regional capacity increases. Now we will concentrate on national capacity, attempting to show the factors, other than regional shifts, responsible for persistent excess capacity.

Let us first focus our attention upon THE Northwestern MILLER data showing capacity, capacity changes and output rates since 1908. Using this information, we will show that excess capacity has persisted in spite of a strong downward trend in capacity. Then we will discuss the industry's own sources of capacity data —available only since 1930. Here we will see that many factors previously shown as capable of perpetuating excess capacity actually have been present in the flour milling industry. Finally, we will summarize the industry's excess capacity situation, bringing together such diverse factors as locational shifts, fluctuations in aggregate demand and the effect of joint costs.

© Donald Alfred Markwalder, 1960.

The most complete, long-term record of flour milling capacity has been maintained by THE Northwestern MILLER, which has been publishing at regular intervals A List of Flour Mills in the U.S. and Canada since the 1890's. Since 1945, too, Bureau of the Census information has been quite complete, and the industry's own figures are complete and available since 1929.

First let us look at THE Northwestern MILLER capacity data.

Rise in Capacity

U.S. flour milling capacity rose from 1,572,000 cwt. daily in 1898 to 2,017,000 cwt. in 1907. It declined each year until 1915; increased during seven of the eight years of the 1915-22 period, and then began a long-term decline[1] which has been interrupted by slight increases in only eight of 35 years. The total decline in milling capacity between 1907 and 1957 was 934,000 cwt. in daily capacity or 46.3%, with the annual average decline being 18,700 cwt., or 0.9%. In 1957 U.S. flour milling capacity was 1,083,000 cwt. daily.

Since the increase in flour output between 1907 and 1957 was only 17.8 million hundredweight, or 8.1%, it is evident that a much fuller utilization of milling capacity has been brought about during the past half-century.

So far as capacity changes revealed by THE Northwestern MILLER[2] are concerned, the half-century can be conveniently divided into six periods. Let us consider each of these:

1. 1907-14: During this eight-year period[3] output was approximately constant or increasing slightly, but capacity declined every year. Capacity increases in the Northwest and Southwest were more than balanced by de-

[1]The observant reader may question why we are interested in capacity statistics which date back as far as 1898 if capacity did not bring its long-term decline—the long-term decline in capacity evidencing the existence of excess capacity not consistent with the long-run equilibrium of the industry—until 1922. What we wish to show is that prior to 1907 capacity had been growing in response to the growing domestic demand for flour. If it had not been for World War I—a random event—the long-term decline in capacity would apparently have begun in 1907.

[2]For the four years, 1954 through 1957, the data used are those of the Bureau of Census.

[3]First year is assumed to be 1906-07.

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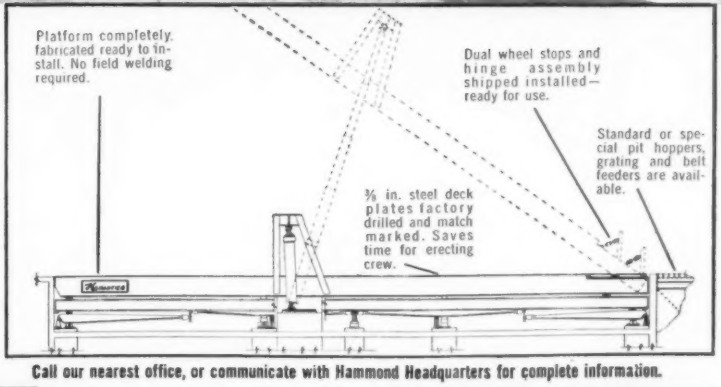
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clines in other areas. The total dip in capacity which took place was 89,000 cwt., or 4.4%, with the average annual drop being 8,100 cwt., or 0.6%.

2. 1915-22: These eight years constitute the period of the largest amount of new mill construction since at least 1900. Output was increasing rapidly year after year until the 1919-20 crop year, when it reached a new high of 255.6 million hundredweight. But following crop year output declined to 190.5 million hundredweight — the lowest it had been in this century. The period was generally very profitable with profits (before taxes) during the 1916-17 crop year reaching a maximum of 40.2%.[4]

TABLE 1

U.S. Milling Capacity and Capacity Changes Since 1907

Year	Daily capacity ——000's cwt.——	Amt. of change	% change
1907	2,017	..	..
1908*	2,010	— 7	— .3
1909*	2,003	— 7	— .3
1910*	1,997	— 6	— .3
1911*	1,991	— 6	— .3
1912	1,985	— 6	— .3
1913*	1,961	—24	—1.2
1914	1,938	—23	—1.2
1915	1,941	+ 3	+ .2
1916	1,953	+12	+ .6
1917	1,928	—25	—1.3
1918	1,949	+21	+1.1
1919	1,971	+22	+1.1
1920	2,068	+97	+4.9
1921	2,128	+60	+2.9
1922	2,153	+25	+1.2
1923	2,074	—79	—3.7
1924	2,016	—58	—2.8
1925	1,960	—56	—2.8
1926	2,048	+88	+4.5
1927	1,930	—118	—5.8
1928	1,947	+17	+ .9
1929	1,928	—19	—1.0
1930	1,806	—122	—6.3
1931	1,817	+11	+ .6
1932	1,666	—151	—8.3
1933	1,650	—16	—1.0
1934	1,645	— 5	— .3
1935	1,648	+ 3	+ .2
1936	1,614	—34	—2.1
1937	1,590	—24	—1.5
1938	1,569	—21	—1.3
1939	1,546	—23	—1.5
1940	1,445	—101	—6.5
1941	1,434	—11	— .8
1942	1,391	—45	—3.1
1943	1,377	—14	—1.0
1944	1,368	— 9	— .7
1945	1,350	—18	—1.3
1946	1,340	—10	— .7
1947	1,328	—12	— .9
1948	1,334	+ 6	+ .5
1949*	1,317	—17	—1.3
1950*	1,300	—17	—1.3
1951	1,283	—17	—1.3
1952*	1,218	—65	—5.1
1953	1,154	—64	—5.3
1954	1,068	—86	—7.5
1955	1,070	+ 2	+ .2
1956	1,076	+ 6	+ .6
1957	1,083	+ 7	+ .7

Source: THE Northwestern MILLER—1907 through 1953; Bureau of Census — 1954 through 1957. Figures in cwt., 000's omitted.

*THE Northwestern MILLER did not publish milling capacity for these years, and any increase or decrease in milling capacity which took place between the years for which THE Northwestern MILLER did make a capacity survey is assumed to have been spread uniformly over the intervening period.

Average Increase

Total increase in capacity for the period was 215,000 cwt., or 11.1%, with the average annual increase being 26,900 cwt., or 1.4%. Capacity increase was greatest in the Southwest, where wheat output was increasing most rapidly. It is interesting to note that even though the 1920-21 crop year was the most unprofitable in milling in 45 years, capacity increased by more in 1920 and 1921 than in any other year of the 50-year period except 1926.

A large amount of new mill construction underway during 1920 was abandoned during 1921, or the capacity increase would have been even greater. The additional capacity increase of 25,000 cwt. which took place during 1922 probably is explained by the fact that decline in output which had taken place was believed to be temporary.

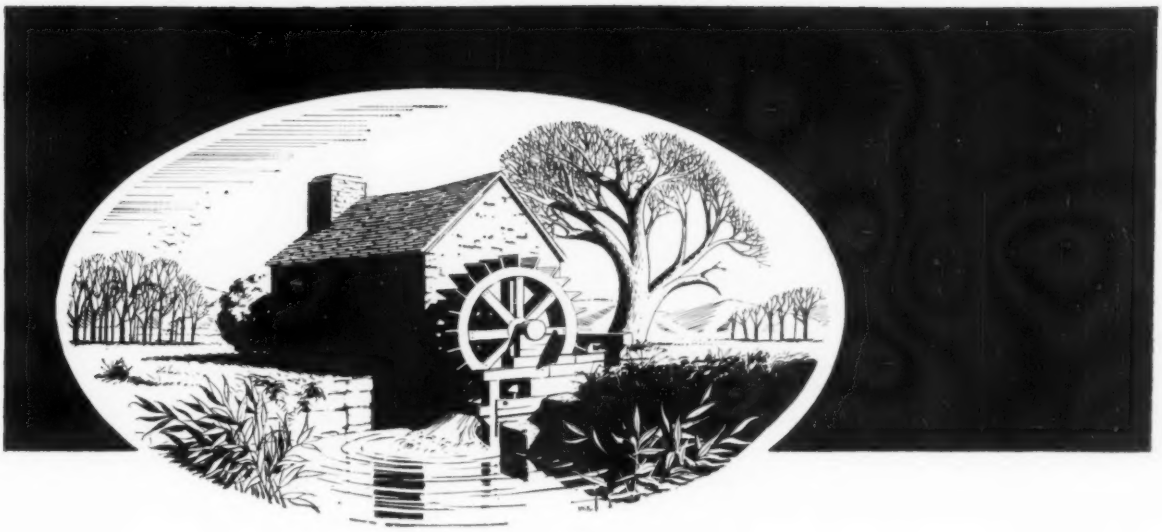
3. 1923-25: During this three-year period capacity began a downward adjustment in response to the postwar decline in demand. Capacity dropped by 193,000 cwt., or 9%, with the average annual decline being 64,300 cwt., or 3%. This decline was very large in the entire area east of the Mississippi River.

4. 1926-28: Capacity went down 13,000 cwt., or 7%, with the average annual decline 4,300 cwt., or 0.2%. Although capacity declined during this period just as during the preceding and following periods, these three years are classified separately because capacity rose during two of the three years, with the increase for 1926 of 88,000 cwt., or 4.5%, the greatest of any year during the half-century.

Construction of new mills in the U.S. during this period included the addition to capacity in Buffalo alone between 1925 and 1929 of 28,100 cwt. Significant capacity increases also took place in the Southwest during this period, one of which was the construction of Pillsbury's large mill at Enid, Okla., in 1928; however. Minneapolis capacity alone declined by approximately 40,000 cwt. between 1925 and 1929.

5. 1929-54: The 26 years, 1929 to 1954, are grouped because this period

[4]This figure is for 28 large milling companies. Federal Trade Commission, "Wheat Flour Milling Industry," p. 64.



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was one of almost continuously declining capacity. There were no years during which large numbers of new mills were constructed, and no two consecutive years showed capacity increases. The only three years which show a capacity increase are 1931, 1935, and 1948. In each case the increase was 0.6% or less. The rise in capacity during 1931 appears to have resulted from the fact that output in 1929 and 1930 was higher than for any two years since 1919-20. The increase in 1948 was a response to the record output of 304.8 million hundredweight during the 1946-47 crop year, and the capacity increase in 1935 probably resulted from the producer exemption provision in the Agricultural Adjustment Act.

The total decline in capacity which occurred between 1929 and 1954 was 879,000 cwt., or 45.1%, with the annual average capacity decline 33,800 cwt., or 1.7%. Of particular interest is the fact that during only one year of World War II and the immediate post war period did capacity increase.

In spite of the fact that the capacity of mills having a capacity in excess of 400 cwt. increased by 100,000 cwt. between 1941 and 1947, THE Northwestern MILLER data show daily capacity as having declined by 106,000[5] cwt. between these two years because of inclusion of capacities of small mills with a daily capacity of less than 400 cwt. It must be remembered that flour output increased by 88.3 million hundredweight between the 1940-41 crop year and the 1946-47 crop year.

Since idle mills are often included in THE Northwestern MILLER capacity totals, it appears that a considerable proportion of the further capacity decline of 86,000 cwt. which took place between 1953 and 1954 results because some idle mills included in the total for the former year are not included in the latter.[6]

6. 1955-57: During these three crop years flour output increased slightly. In response, milling capacity also increased. The total capacity increase from 1955 through 1957 was 15,100 cwt., or an average of 5,000 cwt. per year. The percentage increase was 1.4%, or an average of 0.5% per year.[7]

Since the output of mills with a daily capacity of less than 400 cwt. was only about 8% of total flour output in 1929 and currently less than 3%, and since these mills operate at such a small percentage of capacity, their omission does not constitute an important defect.[8]

Data from industry sources show that during the entire period 1930-57 the decline in capacity in plants having a daily capacity in excess of 400 cwt. was 248,925 cwt., or 21.0%.[9] The primary factor in bringing about this capacity reduction was the closing of 308 mills with a total daily capacity of 502,410 cwt.

Both the number of mills closed and the capacity reduction thus brought about were greatest from 1948 through 1953. Capacity reduction during this period was a reaction of the industry to declining annual exports of approximately 60 million hundredweight between 1946-47 and 1949-50 and succeeding years. During the six-year period 1948 through 1953, 132 mills having a total capacity of 245,905 cwt. were closed. This was 49% of the total capacity reduction brought about by closing mills during the entire 27-year period.

The three-year period during which the capacity reduction brought about by closing mills was third greatest was 1933-35. These years were not highly unprofitable for the industry on an over-all basis, but they were the three years of lowest wheat production during the past half-century. The low level of wheat output appears to be the primary explanation for closing such a large amount of capacity.

In addition to the capacity decline which took place as a result of closing down entire mills, the capacity of 30 mills was reduced. The decline in capacity involved was 90,980 cwt. In most cases these reductions did not lead to any significant sacrifice of economies of scale, because they were usually effected by removing one of the "units" in a plant. It should be noted that no capacity reductions took place during the profitable 1945-47 period, but that capacity reductions were made in six plants in each of

[5] Assuming a 300-day work year, this would mean that annual capacity declined by 106,000 cwt. times 300, or 31.8 million hundredweight.

[6] Capacity data for the years 1954, 1955, 1956 and 1957 are taken from the Bureau of Census.

[7] This increase in capacity should not be interpreted to mean that excess capacity does not still exist in some regions since four plants having a capacity of 22,850 cwt. were closed during the first half of 1958 alone.

[8] I.e., most of these small mills are extra-marginal—particularly from the viewpoint of competition in the national market.

[9] Since the percentage decline in capacity was greatest among mills having a daily capacity of less than 400 cwt., the percentage decline in total capacity was even greater than 21%.

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Destruction by Fire

A further reduction in capacity of 99,775 cwt. resulted from the destruction of 52 mills by fire. As expected, fire destroyed the greatest amount of capacity when mills were operating at the greatest percentage of capacity—1945 through 1947.

The primary offsetting factor to capacity decline brought about by capacity reductions and closing of mills has been expansion of the capacity of existing mills. From 1930 through 1956 inclusive, the rather remarkable total of **411 capacity expansions took place. The gain in capacity brought about by this process was 319,820 cwt.!**

Considering the excess capacity which has existed in the industry, increases of such magnitude may appear anomalous; however, we showed earlier that building a larger plant can represent a perfectly rational response to more elastic revenue or factor supply curves in spite of a declining trend of capacity and existence of below normal profits in the industry.[10] It should be evident that these capacity expansions have played an extremely important part in perpetuating the existence of excess capacity in the industry.

In addition to capacity expansions involving mills with a daily capacity of 400 cwt. or more, there are 24 instances of mills of less than 400 cwt. capacity being expanded to more than 400 cwt. The increase in capacity brought about in this manner was 16,670 cwt.

Only 23 completely new plants were built during the 1930-57 period[11]—plants which at the time they began production had a capacity of 56,700 cwt., or an average of 2,446 cwt.

Just as the numerous capacity expansions appeared anomalous in an industry of excess capacity and below normal profits, so too might the construction of these new plants. It is true that six plants were built in the relatively prosperous 1945-47 and 1948-50 periods. But, in general, the number and capacity of the new ones built during any particular period is not at all highly (positively) correlated with the general profitability of milling at the time.[12] This is explained by the fact that most of the new mills were built in rather special circumstances. Seven were erected within a year or two following destruction by fire of a mill at the same location; three were built in the rapidly growing California market, and one—at Decatur, Ala.—was built to take advantage of a newly completed, navigable waterway. Two of these mills have since closed.

The final capacity increase has been that brought about by re-opening closed mills. Since 1929 only 24 mills with a total capacity of 51,250 cwt. have been re-opened after being closed for any considerable period.[13] «

[10]We have seen that regional shifts may also result in capacity expansions; however, the only regional shift of any considerable importance during this period was that which resulted in a decline in Minneapolis capacity and an increase at Buffalo. There were, of course, also intra-regional shifts in capacity brought about by expanding the capacity of well-located plants. Capacity tended to decline in the less well located rural regions and to expand in terminal wheat markets—particularly those which possessed access to water transportation.

[11]This ignores any new mills having a capacity of less than 400 cwt. which have been built; however, there have been very few mills of this capacity category built since 1930. A new 200 cwt. mill was built in 1932, but the author has no knowledge of any new mills with a capacity of less than 400 cwt. being built since.

[12]The rank correlation is positive but not significant even at the 50% level. The conclusion is the same when new milling capacity is correlated with lagged profits. In computing these results milling profitability was measured by the unweighted profit average of the three largest milling companies. According to this criterion of profitability, the profit rank of the various three-year periods was as follows: 1. 1945-47; 2. 1948-50; 3. 1930-32; 4. 1939-41; 5. 1933-35; 6. 1954-56; 7. 1951-53; 8. 1942-44, and 9. 1936-38.

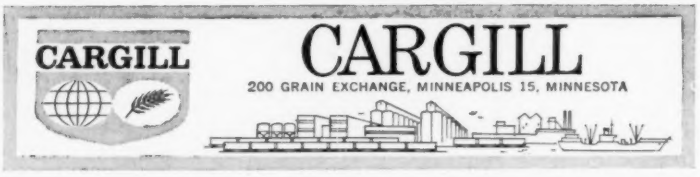
[13]Most of these mills were reopened during the prosperous years between 1945 and 1950.

In Part XVI Dr. Markwalder will make an analysis of changes in capacity, output and percentage of capacity operated since 1930 to show how capacity responds to changes in demand and output. He will then summarize the industry's excess capacity situation.

Michigan Bakers Schedule Conference

Michigan bakers will meet at East Lansing Jan. 10 for their 10th annual educational conference, a full day of workshop sessions highlighted by practical application of various phases of baking production methods.

Scheduled to be held at Michigan State University's Kellogg Center, the conference is under the chairmanship of Fred Hill, Hill's Bakery, Cedar Springs, Mich. «



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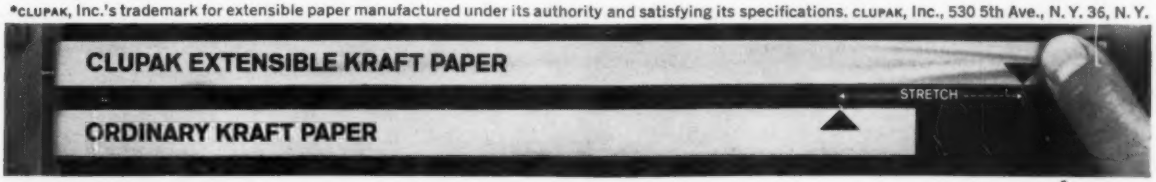

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Technology of the Production of Increased Starch Damage in Flour Milling

By C. R. Jones, E. N. Greer, J. Thomlinson and G. J. Baker

PART II

Effects With Reductions in Succession. The Control of Starch Damage in the Reduction System

IN PART I[1] factors affecting individual reductions were discussed. Clearly such discussion should be extended to cover the effects of the factors, not on individual flour streams only, but on the straight run flour as a whole, or on the long patent divide. Which, for example, would it be better to do with the object of increasing starch damage: To install matt rolls, and raise the differential, on A reduction and make as much flour as possible there, or to keep the release low on A reduction in order to send as much stock as possible to later reductions, where the extent of starch damage could be raised through increases in grinding pressure?

In further illustration, the following figures (from[5] Table 4) show the composition of grinds with smooth A rolls at three different pressures, giving a wide range of flour releases. The maltose figures are shown in brackets beneath the corresponding figures for granulation from sifting analyses. The maltose figures of corresponding fractions under different grinding pressures are proportional to the contents of damaged starch and reflect the operation of the "internal factor" previously discussed.[6]

If the gentle grind represented above were made in a small mill (having no B_2 reduction), the dunst, amounting to 42% of the A feed, with maltose figure 0.53, would pass to C roll; F roll would receive about 40% (the total overtails of No. 5 silk) with maltose figure between 0.78 and 0.57. With the heavy A grind, on the other hand, the dunst to C roll would represent only 33.1% of the A roll feed, but its maltose figure would be 0.89, as against 0.53 in the first case. The proportion reaching F roll would be reduced to 25%, but its maltose figure would be raised to about 2%.

The next question concerns the effect, for example, on C reduction of an increase from 0.53 to 0.89 in maltose figure of its feed (neglecting for the moment the fact that it receives material from sources additional to A dunst). Experiments in these laboratories have indicated that the increment in the maltose figure of the feed should be added to the initial maltose figure of each fraction of the grind. Thus, both the C flour and the C dunst will be higher in maltose figure by 0.36, when the maltose figure of the C feed is 0.89, than when it is 0.56.

Data relating to other reductions, as far as E in a typical British milling system, are represented in Table 7. This shows the effects of 30 different ways of running the reductions (in a mill operating on an average bread-making wheat mixture) on the amount and the maltose figure of the total flour, made in A to E reductions inclusive. For example, the effect of increasing the release (or grinding pressure) on A reduction only, and on other reductions, is shown. The effect, under each of these conditions, of changing A rolls from smooth to fine and to coarse matt is worked out, and also the effect of increasing the differential to 1¾, and so on.

Table 8 gives some explanation of the underlying mechanism in so far as it shows values for the various stocks, other than flour, handled in the system. Only the values for Set 1 (use of smooth rolls throughout the system) are shown in Table 8.

The feeds to A and A_2 reductions, in keeping with normal practice, contained no material derived from the reduction system. The A_2 feed was derived from the purifiers handling the third break fine semolina, and the X (scratch) stock, respectively. The feeds to B, B_2, C and D were derived from both break and reduction systems, that to E from the (D) reduction only. The data available were insufficient for judging the effect of increase in release on the A_2 reduction.

The different ways of running the reduction system represented in Table 7 caused the total amount of combined A-E flour to vary between 53 and 60% of a total flour extraction of 73% (based on the wheat). The maltose figure of this combined A-E flour could be raised by about 0.4% (from 1.57 to 1.96) through increasing, as much as possible, the severity of grinding with smooth rolls on all reductions. Changes in A roll surface and differential affected the maltose figure of the total A-E flour considerably. Thus, a change to a coarse matt surface at 1¾ differential, on A alone, increased the maltose figure of the total flour by 0.3 (from 1.57 to 1.87). Moreover, this increase is superimposed on that obtained by increasing grinding pressure. The greatest change, in the maltose figure of the total flour (from A to E), made through the milling variations studied, was 0.82 (from 1.57 to 2.39). For effectiveness in increasing starch damage, A reduction, in addition to the other reductions, should be heavy, particularly if the differential and the surface roughness of the A rolls are increased.

Changes in A reduction affect vari-

The authors of this paper are with the Research Association of British Flour Millers, St. Albans, England, and have made many noteworthy contributions to milling technology. The article was originally published in Milling of Liverpool and the cooperation of the editor of that publication in preparing the material for publication in THE MILLER is appreciated. In Part I, published Sept. 18, the authors dealt with factors in individual reductions.

TABLE 7

Yield (yld.)* and maltose figure (m.f.)† of each roll flour, and of total flour from A to E‡ reductions, with different combinations of rolling pressures, types of surface and differentials¶

Set No.	A Roll¶ Surface	Different'l	Pressure A	Pressure Other reductions§	FLOUR A yld.	A m.f.	A_2 yld.	A_2 m.f.	B yld.	B m.f.	B_2 yld.	B_2 m.f.	C yld.	C m.f.	D yld.	D m.f.	E yld.	E m.f.	Total yld.	Total m.f.
I	Smooth	1.25	Normal	Normal	4.9	1.20	1.1	1.10	10.2	1.50	2.8	1.90	12.1	1.50	6.9	1.90	1.1	2.3	39.1	1.57
			Heavy	Normal	9.0	1.25	1.1	1.10	9.9	1.58	2.3	2.46	11.0	1.67	6.3	2.17	0.95	2.57	40.55	1.71
			Normal	Heavy	4.9	1.20	1.1	1.10	11.4	1.85	3.1	1.75	13.6	1.80	6.3	2.61	0.9	4.1	41.3	1.89
			Heavy	Heavy	9.0	1.25	1.1	1.10	11.1	1.93	2.7	2.35	12.4	1.97	5.7	2.88	0.8	4.37	42.8	1.96
II	Fine matt.	1.25	Normal	Normal	4.9	1.90	1.1	1.10	10.2	1.50	2.8	1.90	12.1	1.65	6.9	1.95	1.1	2.35	39.1	1.72
			Heavy	Normal	9.0	2.00	1.1	1.10	9.8	1.50	2.2	2.12	12.4	1.83	6.45	2.10	1.0	2.52	41.9	1.84
			Normal	Heavy	4.9	1.90	1.1	1.10	11.4	1.85	3.1	1.75	13.6	1.97	6.4	2.65	0.9	4.14	41.4	2.04
			Heavy	Heavy	9.0	2.00	1.1	1.10	11.0	1.85	2.4	1.93	14.1	2.15	5.7	2.78	0.8	4.27	44.1	2.13
III	Fine matt.	1.75	Normal	Normal	4.9	2.70	1.1	1.10	10.2	1.50	2.8	1.90	12.1	1.65	6.9	1.95	1.1	2.35	39.1	1.82
			Heavy	Normal	9.0	2.80	1.1	1.10	9.8	1.50	2.2	2.01	12.5	1.83	6.5	2.07	1.0	2.47	42.1	2.01
			Normal	Heavy	4.9	2.70	1.1	1.10	11.4	1.85	3.2	1.75	13.6	1.95	6.3	2.64	0.9	4.15	41.4	2.12
			Heavy	Heavy	9.0	2.80	1.1	1.10	11.0	1.85	2.4	1.82	14.1	2.15	5.7	2.73	0.8	4.22	44.1	2.28
IV	Cse. matt.	1.25	Normal	Normal	4.9	2.40	1.1	1.10	10.7	1.53	3.4	1.70	10.0	1.65	7.25	1.82	1.1	2.23	38.45	1.78
			Heavy	Normal	9.3	2.50	1.1	1.10	10.0	1.55	2.5	2.24	10.8	1.73	6.4	2.07	1.0	2.47	41.1	1.95
			Normal	Heavy	4.9	2.40	1.1	1.10	12.0	1.88	3.9	1.55	11.1	1.95	6.7	2.50	1.0	3.98	40.7	2.06
			Heavy	Heavy	9.3	2.50	1.1	1.10	11.2	1.90	2.9	2.10	12.1	2.04	5.8	2.79	0.8	4.28	43.2	2.23
V	Cse. matt.	1.75	Normal	Normal	5.0	3.30	1.1	1.10	10.7	1.53	3.4	1.70	9.9	1.66	7.25	1.83	1.1	2.23	38.45	1.87
			Heavy	Normal	9.3	3.30	1.1	1.10	10.0	1.55	2.5	2.26	10.8	1.73	6.5	2.13	1.0	2.53	41.2	2.14
			Normal	Heavy	5.0	3.30	1.1	1.10	12.0	1.88	3.9	1.55	11.0	1.95	6.75	2.50	1.0	4.00	40.75	2.18
			Heavy	Heavy	9.3	3.30	1.1	1.10	11.2	1.90	2.8	2.10	12.1	2.04	5.8	2.79	0.8	4.28	43.1	2.39
VI	Corrugat'd**	1.25	Normal	Normal	4.8	1.30	1.1	1.10	10.1	1.48	2.6	1.81	13.5	1.46	7.15	1.87	1.1	2.27	40.35	1.56
			Heavy	Normal	9.3	1.35	1.1	1.10	9.8	1.51	2.2	2.17	12.1	1.67	6.4	2.06	0.95	2.76	41.85	1.65
			Normal	Heavy	4.8	1.30	1.1	1.10	11.3	1.83	2.9	1.64	15.2	1.78	6.3	2.57	0.9	4.07	42.5	1.89
			Heavy	Heavy	9.3	1.35	1.1	1.10	10.9	1.86	2.4	2.01	13.6	1.99	5.6	2.74	0.8	4.24	43.7	1.93
VII	Corrugat'd	2.5	Normal	Normal	4.8	3.00	1.1	1.10	10.1	1.49	2.6	1.79	13.5	1.63	7.2	1.93	1.1	2.33	40.4	1.83
			Normal	Heavy	4.8	3.00	1.1	1.10	11.3	1.84	3.0	1.62	15.2	1.95	6.3	2.62	0.9	4.12	42.6	2.14
VIII	Fine matt.	1.25	Normal	Normal	4.9	1.90	1.1	1.50	9.7	1.62	2.6	1.34	12.7	1.91	7.4	1.61	1.2	1.61	39.6	1.72
			Heavy	Normal	9.0	2.00	1.1	1.50	9.3	1.62	2.0	1.43	13.1	2.10	6.9	1.71	1.1	1.73	42.5	1.86
IX	Fine matt.	1.75	Normal	Normal	4.9	2.70	1.1	1.50	9.7	1.62	2.6	1.34	12.7	1.91	7.4	1.61	1.2	1.61	39.6	1.82
			Heavy	Normal	9.0	2.80	1.1	1.50	9.3	1.62	2.0	1.30	13.1	2.10	6.9	1.70	1.1	1.70	42.5	2.01

*Expressed as a percentage of 1st break feed.

†Rumsey-Kent-Jones procedure; see footnote to p. 34 of Part 1.[6]

‡Equivalent terms: A, Sizings; A_2, Sizings; B, 1st midds.; B_2, 2nd quality (cse.), C, 2nd midds.; D, 3rd midds.; E, 4th midds. (part of).

¶Reduction rolls, other than A, with smooth surfaces and 1.25 differential in Sets I to VII. In Sets VIII and IX, fine matt. on all rolls except B_2 and E, which were smooth. In all sets, differential 1.25 on all reductions, other than A.

§Except on A_2 reduction, where normal pressure used in all sets.

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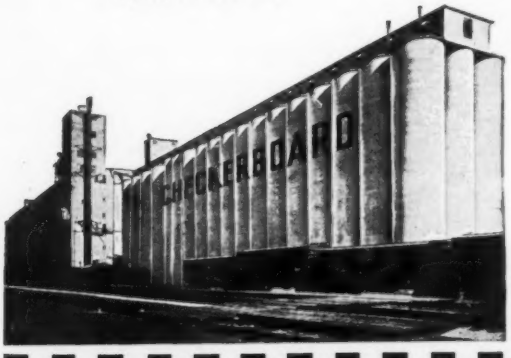

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ous later reductions. Thus (Table 7), increased pressure on A grind caused increases of 0.27 in the maltose figures of D and E flours.

Different roll surfaces may affect various factors differently. While (Table 7) the substitution of fine matt for smooth rolls on A reduction raised the maltose figure of the total flour, the figure was not further raised through additional similar substitutions on other reductions, because, although these caused rises in the maltose figures of some flours, they reduced considerably those of B_2, D and E flours. This, in turn, was attributable to marked reductions in the maltose figures of (i) B tails (feed to B_2), and (ii) C and B_2 dunsts (feed to D). Clearly these fine matt rolls could be usefully employed, to increase starch damage, only on A and A_2 reductions.

On the other hand, with some commercial B and C rolls that had become roughened through long wear, the dunst, tails and flour (sifted from the grinds) have been found considerably higher in maltose figure than those produced with really smooth rolls. The effects of this type of roll surface would therefore differ materially from those of the fine matt surface represented in Sets II, III, VIII, and IX of Table 7.

TABLE 8

Values for Stocks Other Than Flour Corresponding to Those for Flours Shown in Set 1 of Table 7

Test No.	1	2	3	4	1	2	3	4
Grind pressure*:								
A reduction	NI	Hy	NI	Hy	NI	Hy	NI	Hy
Rest of system	NI	NI	HY†	Hy†	NI	NI	Hy†	Hy†
	Proportions‡				Maltose Figures			
A feed	24.0	...	...	...	0.5	...	...	...
A dunst to C (2nd m)	10.5	9.2	10.5	9.2	0.7	0.95	0.7	0.95
tails to B (1st m)	1.3	0.9	1.3	0.9	0.95	2.3	0.95	2.3
tails to B_2 (2nd qual. cse.)	3.4	2.2	3.4	2.2	1.45	3.0	1.45	3.0
tails to F (1st tailings)	3.9	2.7	3.9	2.7	2.2	4.2	2.2	4.2
A_2 feed	6.0	6.0	6.0	6.0	0.65	0.65	0.65	0.65
A_2 dunst to C	2.8	2.8	2.8	2.8	0.7	0.7	0.7	0.7
tails to B and B_2	2.0	2.0	2.0	2.0	1.2	1.2	1.2	1.2
B feed	14.4	14.0	14.4	14.0	0.55	0.65	0.55	0.65
B dunst to C	2.4	2.3	1.7	1.6	2.7	2.8	3.0	3.1
tails to B_2	1.8	1.8	1.3	1.3	4.2	4.3	4.5	4.6
B_2 feed	8.2	7.0	7.4	6.5	1.8	2.4	1.7	2.3
B_2 dunst to D	4.4	3.8	3.8	3.2	1.8	2.4	2.2	2.8
tails to F	1.0	0.8	0.8	0.7	3.0	3.6	3.9	4.5
C feed	16.7	15.3	16.0	14.6	1.0	1.15	0.95	1.1
dunst to D	4.5	4.1	2.4	2.2	2.2	2.3	3.0	3.2
D feed	10.2	9.3	7.9	7.1	1.7	2.0	2.0	2.3
dunst to E	3.3	3.0	1.6	1.4	2.4	2.7	3.5	3.8
E (feed, D dunst) dunst to G (4th m)	2.0	1.8	0.5	0.5	2.9	3.2	4.7	5.0

*"NI" denotes Normal pressure or release.
"Hy" denotes Heavy pressure or release.
†Except on A_2 reduction where the pressure was normal.
‡Expressed as percentage of 1st Break feed.

We have also noticed that relatively highly polished rolls could sustain an appreciable amount of roughening before the material ground with them began to increase in maltose figure increment. However, after a certain degree of erosion of the surface had occurred, the rise in maltose figure became rapid. Clearly, means for conveniently characterizing the surfaces of reduction rolls would form a desirable subject of invention.

Incidentally, the yield of C roll flour is reduced (Table 7) when a coarse matt surface is substituted for a fine matt on A reduction. On the other hand, the employment of fine matt rolls with a heavy grind, or alternatively, of finely corrugated rolls particularly at high differential, on A reduction, is advantageous in this respect. Unless, however, stocks are well purified the corrugated rolls give rise to rather higher ash contents in certain flours. The maltose figure of the total flour is lowered slightly through substitution of corrugated for smooth rolls, at 1.25 differential, on A reduction; on the other hand, it is raised considerably through running the corrugated rolls on A at a differential of 2.5.

The effect of increasing grinding pressure in A reduction, on the dam-

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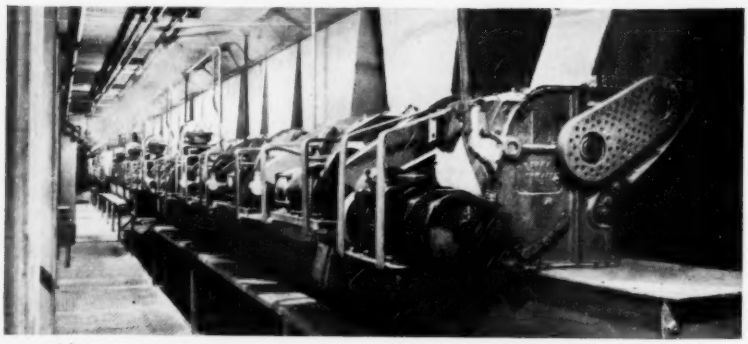

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aged starch content in the total flour, depends on the type of A rolls in use and on their differential speed. The effectiveness of a heavy grind on A is increased when the A rolls have a rough surface and high differential; it is reduced when they are corrugated and used with a differential of 1¼. Comparisons such as these may readily be made from Table 9 (based on Table 7).

Wheat Type

The effects of change in wheat type, from hard to soft, on the proportions and maltose figures of fractions obtained by sifting the corresponding (A roll) grinds have been shown[6], (Table 8). The grinds were made with smooth rolls under comparable conditions and were fairly light. Although, under these conditions, the relative amounts of flour, dunst and tails were similar for hard and for soft types of wheat, the coarser fractions of the grind from the hard wheat were found to rise in maltose figure much more than those from the soft. This variation reflected the difference in the strain experienced by the particles during the reduction, as a result of their different hardnesses.

For similar reasons, differences in starch damage produced by different ways of running the reduction system (varying differential, nature of roll surfaces, as well as degrees of pressure) will be increased through substituting hard for soft wheat in the feed to the mill. Furthermore, with an all-Manitoba grist, the tail stocks and lower grade flours, particularly, are much higher in starch damage (maltose figure) than with an ordinary grist; conversely, with a soft grist, these stocks, particularly, are much lower in starch damage than with an ordinary grist. Bird[2] has reported that Australian wheat varieties differ in susceptibility to excessive starch damage during milling. Sandstedt and Schroeder[9] have recently instructively illustrated the subject by means of photomicrography.

PART III

The Break System

It was shown[5] that the maltose figures of coarser particles in unreduced stock (straight from the break system) were always relatively low and rose only slightly as the size of the particles decreased (until it became less than the mesh width of No. 10 silk). Subsequently, the possibility that a variation in breaking conditions might affect the extent of starch damage was

TABLE 9

Increases in maltose figure of total (patent) flour* caused through raising grinding pressures on various reductions, with various changes in surface and differential on A (sizings) rolls

Change in pressure on:		A Roll: Surface:	Smooth	Fine matt.		Coarse matt.		Corrugated†	
A reduction	Other reductions	Differential	1.25	1.25	1.75	1.25	1.75	1.25	2.5
			(Increase in maltose figure)						
Increase to heavy	Nil, normal		0.14	0.12	0.19	0.17	0.27	0.09	..
Nil, normal	Increase to heavy		0.32	0.32	0.30	0.28	0.31	0.33	0.31
Increase to heavy	Increase to heavy		0.39	0.41	0.46	0.45	0.52	0.37	..
Nil, heavy	Increase to heavy		0.25	0.29	0.27	0.28	0.25	0.28	..
Increase due to change in A roll surface or differential‡		Min.	...	0.13	0.23	0.17	0.29	nil**	0.25
		Max.	...	0.17	0.32	0.27	0.42		0.26

*Combined A to E (sizings to 4th midds.) flours.
†80 cuts per inch.
‡From smooth at 1.25 differential.
**Nil or slight reduction.

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ERRATUM

There was an error in the caption for Fig. 2 appearing on page 40 of THE MILLER for Sept. 16. The statement of magnification in parentheses following the first word of the caption should have read **(x24)** and not **(x38)**. The error occurred because of the reduction in size of the original for publication purposes. «

extensively explored in a commercial mill*. Fractions obtained by sifting the grinds of the 1st and 2nd breaks were examined. The break rolls were run at normal differential (2½) but at a variety of settings, covering a wide range of pressures and releases, and with various dispositions of corrugations (sharp to sharp, dull to sharp, etc.). The wheat milled was a mixture of hard and soft types, suitable for breadmaking; the moisture content of the mill feed was 17.0-17.5% (then usual in the U.K.).

With both the 1st and 2nd breaks, the total releases varied, according to conditions, from about 10 to over 50%; the proportions of coarse semolina sifted from the releases ranged from about 10 to over 40% of the grind. The corresponding ranges for the fine semolina, middlings and break flours were about 1-7, 0.5-3, and 1-6 respectively.

The maltose figures of the products of the first break were not affected through the wide variations that were made in conditions of operating the rolls, including extreme differences in roll pressure and release. This statement covers the various possible dispositions (sharp to sharp, etc.), as well as age of corrugations. On the average the maltose figures of the various break stocks examined were: Coarse semolina 0.55%, fine semolina 0.6%, middlings 0.7% and flour 1.0%.

In respect of maltose figure, the second break behaved similarly to the first in every respect, except that the tails (feed to the 3rd break) was found to rise in maltose figure (in the range 0.6 to 1.3%) as the rolling pressure was increased. Similar results were found repeatedly over a period of many months; they were affected remarkably little by changes in the wheat mixture that inevitably occurred during so long a period. In pre-war experience of semolina (A roll feed) samples, from various commercial mills operating on bakers' grist, the average (and most common) maltose figure was close to 0.5%; values rarely fell outside the range 0.35 to 0.65%.

PART IV
Baking and Gassing Tests on Flours Produced with Different Roll Surfaces and Differentials

With each of two wheats, baking tests were made on two laboratory-milled straight-run flours which showed considerable differences in maltose figure, as a result, principally, of the use of smooth reduction rolls in the one case and of rolls that had become rough and pitted through wear in the other. The wheats were No. 4 Manitoba and Argentine (Rosafe Plate). While, with each, both flours were alike in color and ash content, the respective maltose figures were:

Flour No.:	1	2
Roll surface:	Smooth	Pitted
No. 4 Manitoba	1.9	3.1
Plate	0.8	1.3

Manitoba sample No. 1 behaved satisfactorily (for No. 4 grade) in dough and loaf, but the dough from sample 2 became tender and sticky as fermentation proceeded and the loaf showed high-maltose characteristics (collapsed sides and poor "gummy" crumb). Both Plate flours gave fairly good loaves, defective principally in having rather pale, biscuity crust and, in the case of 1, a rather tough, irregular crumb; Plate 2 gave the better, softer crumb.

Other tests were made on A roll flours produced in a commercial mill by grinding similar feeds (semolina), with different roll surfaces or differentials, but with pressures adjusted to give similar flour releases. The results of maltose and gas tests in Table 10 show that sample 1, with a maltose figure of only 0.91†, was a quite inadequate gasser since the gas production fell to a very low level during the fourth hour; this, with 2% yeast (of a comparatively slow type then used), corresponded to the proving period. The substitution of matt rolls for smooth caused the gassing power of the A flour to become just satisfactory, in keeping with the rise in maltose figure to 1.63.

Pulkki[5] showed that differences in

*In collaboration with the late Col. Brereton Fairclough, and David Fairclough, in 1938.

†These figures were obtained with the old Rumsey-Kent-Jones procedure, with which 1.3-2.2 was the desired range of values (vide footnote (†) to page 34 of Part I [4]).

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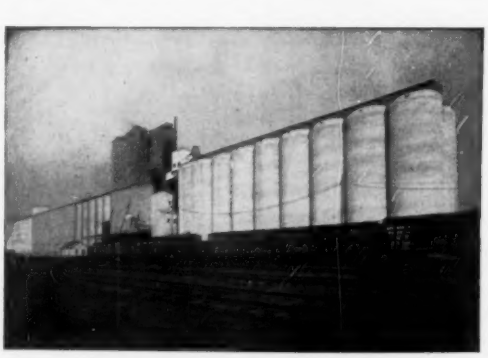

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TABLE 10

Results of maltose and gassing tests on A roll flours ground commercially from similar feeds with releases, but with different roll surfaces or differentials

	Maltose figure	Gas production*: Hours: 1st	2nd	3rd	4th	5th	6th	7th	8th	Total in 24 hrs.
Comparison of Smooth and Matt Rolls on A Red. at 1.25 Differential:										
1. Smooth	0.91	70	100	82	38	33	22	17	15	600
2. Matt.	1.63	62	100	130	90	40	30	20	20	780
Comparison of 1.25 and 1.75 Differentials With Matt A Rolls:										
3. 1.25	1.45	60	100	120	112	60	20	30	17	814
4. 1.75	3.22	55	140	125	118	117	92	58	50	1070

*Ml. of gas produced at 80° F. by 50 g. flour, with 30 ml. water, 1 g. yeast and 0.63 g. salt.

Corresponding size of sieve aperture (mm.)	PERCENTAGE OF SAMPLE OVER: 24 g.g. 0.860	32 g.g. 0.605	1's 0.390	5's 0.270	10's 0.135	Flour (thru 10's) ....
Gentle grind	....	2.3	15.2 (0.78)	24.5 (0.57)	42.0 (0.53)	15.8 (0.98)
Rather heavier	....	1.2	8.4 (1.19)	14.8 (0.81)	51.1 (0.64)	24.7 (0.93)
Very heavy	1.7	4.5 (3.3)	8.8 (2.14)	11.8 (1.36)	33.1 (0.89)	39.6 (1.02)

maltose figures of sub-samples of different finenesses, prepared by repeatedly grinding a flour sample until it passed wholly through successively finer silks, corresponded to differences in gas production which were substantial only in the later stages of fermentation. Dadswell and Gardner[3] and also from a citation by Marston[7], Bennett[1] and Hampel[4], have shown that an increase in the content of damaged starch leads to an increase in gas production after 3 to 4 hours' fermentation. The first named workers found the effect reached a maximum in the fourth hour.

In the present instance, indications of the gassing and maltose tests were substantiated by the results of a baking test, using four hours' fermentation, including final proof, with 2% yeast and 1¼% salt. Sample 2 required additional water when made into dough, in keeping with its greater content of damaged starch. It held the water satisfactorily during fermentation and, up to scaling, both doughs fermented well and handled similarly. During the final proof, however, sample 1 fell off in gassing and "proved" sluggishly, while sample 2 "worked" well throughout. The appearances of the loaves confirmed these indications. 1 was of fairly good volume but pale crust; it had a broken face and a crumb of good grain but poor spring. 2 was larger, with a generally better outside appearance, and much better crumb spring than 1.

Of the second pair, sample No. 3 was already a satisfactory gasser, but No. 4, with the markedly higher maltose figure, maintained a high rate of gas production for a much longer period. A baking test again showed the flour with higher content of damaged starch to have a higher water absorption but, otherwise, the samples differed little either in dough or bread except for an appearance of excessive diastesis in the loaf from sample No. 4. It had a very red crust, slightly defective volume and rather open crumb, of irregular grain, but without the stickiness characteristic of "high maltose" flours. Presumably these defects would have disappeared if the flour had been blended into a larger amount of ordinary flour or, better, into flour that would otherwise have been somewhat deficient in gassing power. There was unfortunately insufficient material available to test this point. «

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[1]Bennett, Ruth (1955) cited by Marston[7].
[2]Bird, L. H., Nature 180:815 (1957).
[3]Dadswell, Inez W., and Gardner, Joan F., Cereal Chem. 24:415 (1947).
[4]Hampel, G. (1954), cited by Marston[7].
[5]Jones, C. R., Cereal Chem. 17:133 (1940).
[6]Jones, C. R., Greer, E. N., Thomlinson, J., and Baker, G. J. (Part I of this paper)—The Miller, 19:38 (1961).
[7]Marston, P. E., Food Tech. in Australia, 11:591 (1959).
[8]Pulkki, L. H., Cereal Chem. 15:749 (1938).
[9]Sandstedt, R. M., and Schroeder, Helen, Food Tech. 14:257 (1960).

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Belt Selection Guide

A belt selection guide to provide at a glance comparisons of 11 different brands of belting, their effectiveness under varying operating conditions and handling of different materials, is offered by Imperial Belting Co. The guide tells the type of belting best suited for abrasive and moist materi-

als, for oils, fats, acid content, and for high temperature operations. It shows how many plies are required to handle safely a working load and how requirements vary with different amounts of elevator bucket projection. Complete, step-by-step instructions are included to show how to calculate maximum tension, safe working loads and ply requirements. The chart also shows weights per cubic foot of common grain and feed materials.

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Load Control System

Pulverizing Machinery Co. has introduced its "Mikro-Monitor," an automatic load control system specifically designed for its "Mikro-Pulverizer," "Mikro-Atomizer" and "Mikro-Budg." The company claims that the unit will permit grinding production increases up to 25%. Essentially an over-current limiting device, "Mikro-Monitor" goes into operation when material flows too freely into the mill grinding chamber or changes its physical properties (hardness, toughness, etc.). Increase in power load on the main drive motor, caused by either of these conditions, automatically trips a switch which stops the motor on the feed screw mechanism. When the power load is once again in a predetermined range, the feed screw mechanism resumes operation. It is said to assure constant operation with virtually no supervision.

Circle No. 4993
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Belt Tripper

A heavy duty, cable-propelled belt tripper, which permits discharge of material to points along the length of a conveyor system, has been added to the line of materials handling equipment manufactured by Finco, Inc. The belt tripper is a 5,500-lb. unit with a 36-in. wide belt, built expressly for high capacity stock-piling operation. It is 18 ft. in length, 4½ ft. in width and 7 ft. in height. The unit is track mounted. Finco's cable-propelled tripper is for installations where a power-propelled tripper is required, but where electrical conductors or trolley wires are undesirable. Movement of the tripper, forward or in reverse, is accomplished by a single wire rope suitably reeved through the tripper and a stationary sheave, and driven by a winding machine. Travel speed is approximately 30-ft. a minute.

Circle No. 4994
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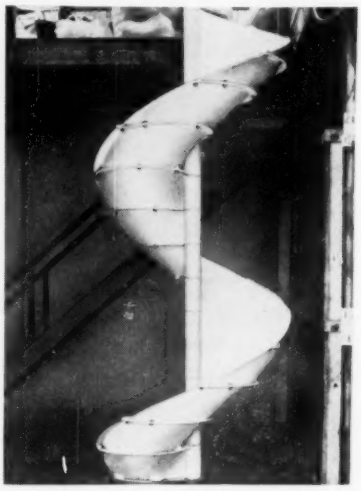
Glass Fiber Chute

A glass fiber sack chute, said to be lighter in weight but more rigid in construction than previous metal chutes, is being manufacturerd by Thomas Robinson & Son, Ltd. The chute is easy to erect, and the load on a building in which it is installed is considerably reduced, the company states. Designed in easily-assembled sections, each 10-5/16 in. deep, the chute has an over-all diameter of five feet. There are eight sections to a pitch, each pitch having a height of 6 ft., 10½ in. The sections are bolted together at four points and are held rigidly by a 4½ in. steel tubing center column fixed to a cast iron base. Tests for deflection and compression carried out with various products in bags up to 2.5 cwt. capacity, have shown



that the chute is equally rigid when used for storage of bags over a period of time, claims the manufacturer.

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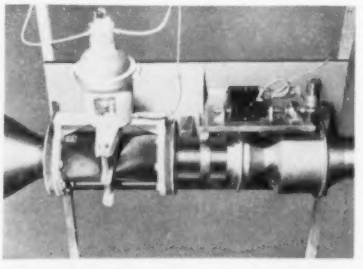
Weighing System

A continuous weighing system, with automatic control of weight, for dry-flow processes is now available from Industrial Powertronix, Inc. The manufacturer states that the system offers a guaranteed accuracy of plus or minus 1%, low operating cost, easy installation in existing spouting, and practically no maintenance. Use of these systems is said to allow complete automation of any dry-flow process or combination dry-flow and liquid process. The unit is the new "IPI"



Flo-Weight Controller, a combination of pneumatically operated, "pinch"-valve and a precision device called an "IPI" Dry-Flow Meter, which is con-

stantly weighing the dry-flowing material. Any variation in a previously selected flow route automatically results in a signal from the meter to the pinch-valve controller to correct rate of flow. If desired, flow rate may also be recorded and/or totalized. Flow Weight Controllers are available to fit spout sizes from 2 in. to 14 in. with capacities from 10 to 3,500 lb. per minute. Over-all sizes vary from 18 in. by 11 in. by 20 in. for the two-inch spout size to 33 in. by 24 in. by 78 in. for the 14-in. spout size.

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Conveying Elbows

Systems Engineering & Manufacturing Co., Inc., is offering free literature on its line of conveying elbows and tubing elbows, constructed of steel or aluminum. Standard bends are 45° and 90°, but they can be furnished to any requirement on custom orders. Included in the literature are size and model information as well as illustrated engineering drawings. The company claims that the elbows are rugged and save space, without causing a bottleneck or wear spot in the conveying system.

Circle No. 4997
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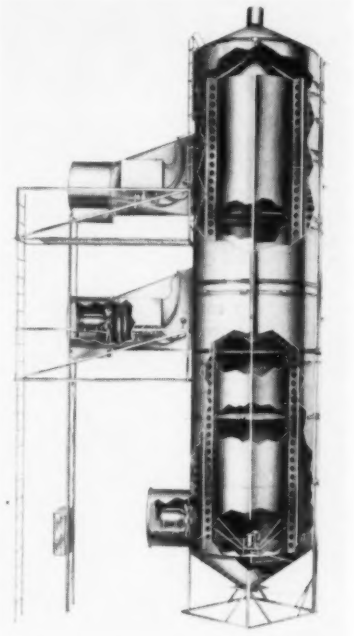
Continuous Flow Dryer

The Model CF-75 Continuous Flow Grain Dryer is being offered by ACE Supply & Equipment Co., Inc. The unit will dry 1,000 bu. per hour, and its design is similar to the company's 800-bu.-per-hour machine, which also features multi-stage drying. The Model CF-75 is equipped with such "ACE High" features as push button operations, what is claimed to be a foolproof sequence starting, safety shut-off and alarm. Operation is said to be simple, and the design includes the manufacturer's climatic control neutral chamber, which can be made a



part of either the heating chamber or the cooling chamber in a matter of seconds for greater efficiency in varying climatic conditions.

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Snap-Action Switches

Micro Switch, a division of Minneapolis-Honeywell Regulator Co., is offering copies of a publication in which plant engineers, electricians and maintenance personnel show the use of snap-action switches to increase production efficiency. The material is illustrated by drawings and photographs, and contains five methods claimed to save man hours, protect operators and machinery, and to eliminate waste.

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Vibrating Screen

Overstrom & Sons, Inc., has available its Series 500 Vibrating Screen designed especially for light-duty screening requirements in the fields of food products, agricultural commodities and for sizing, scalping and de-watering applications. Overstrom & Sons state that the Series 500 retains all basic design and operating characteristics of its larger Series 1,000 vibrating screens. Features include a unitized vibrator cartridge, easy amplitude adjustment, 98% vibration isolation, push-type tapered bearing removal sleeves, and double piston ring grease seals.

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Pneumatic Conveying

A positive and negative pressure portable gas-engine-driven pneumatic conveying system for transferring granules or powders from bulk cars to trucks or bins, has been developed by Sprout, Waldron & Co., Inc. The unit, which is also available with an electric motor drive, may be used for moving materials from one point to another.

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Laboratory Mill

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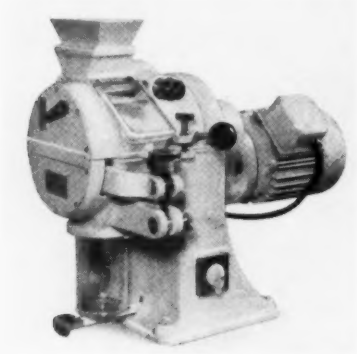
quirements that flour will be of the same particle size for purposes of the sedimentation test. The mill has corrugated chilled iron rolls with a diameter of 3-13/64 in. and a length of 2-25/64 in. driven by an alternating current motor through gears enclosed in a strong casing. By releasing a locking screw, the upper part of the machine, fitted with a plexiglass inspection window, can be opened far enough to permit removal of adhering flour dust from the interior of the casing and the rolls. The feed valve can be set by turning a knob which can be locked in position. Adjustment can be read on a scale.



Circle No. 5002
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Lightweight Vibrator

Martin Engineering Co. has added a miniature lightweight vibrator, the 7½ oz. BD-13, to its line of Vibrolator Vibration Inducers. The BD-13 will handle up to 10 cubic ft. capacity bins. It is used for bringing powdered, particulate or crystalline materials out of hoppers, down chutes and through screens. The BD-13 is said to have silent operation and is fitted with a replaceable jet for air economy. Maximum air consumption is six cubic ft. per minute (free air at 80 psi), declining as the requirement for high speed operation declines and air pressure is reduced. It will operate on as little as 5 psi, states the manufacturer. A chrome steel ball, driven in an orbit on replaceable raceways of hardened high alloy steel, is said to produce infinitely controllable frequencies from 0 to 22,000 cycles per minute.

Circle No. 5003
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Grain Drying Plant

Aeroglide Corp. announces that it is completing construction of a large, modern grain drying plant capable of handling 6,000 bu. per hour, for one of the U.S.' major grain handling firms. The grain drying facility, through what Aeroglide states is a unique feeding arrangement, can be operated at 2,000, 4,000 or 6,000 bu. per hour, depending on drying requirements. Fuel is natural gas, and the burners have sufficient capacity to heat a housing development of 1,000 average sized homes. The dryer is equipped with a "Centrilector." Aeroglide states that this device separates airborne material from the exhaust air of the dryer and deposits it back into the dry grain stream or at other desired locations. Problems of air pollution and plant cleanliness are well under control, it is claimed, and hidden losses in the drying operation are held to a minimum. The plant is designed to handle wheat and other grains.

Circle No. 5004
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Poly Roll Liners

A self-dispensing box of perforated polyethylene roll liners, named "Sana-Roll," has been introduced by Bemis Bro. Bag Co. The paperboard box, which protects the liners from dirt and contamination, is slotted to permit easy withdrawal and separation of the liners. The company states that the roll liners are used in a variety of situations, from lining fiber and metal drums to packaging. The liners are wound on cores and separated at the perforations as they are used. The dispensing box can be placed on a table or floor, or suspended on an overhead rack. The protected roll of liners does not have to be removed from the box at any time.

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Five Million Acre Error Revealed in USDA Figures for Reduced Corn Plantings

By F. C. Bisson
Chicago Correspondent

"The House Agriculture sub-committee has given its approval to an extension [of the Feed Grain Law] for the 1962 corn and other feed grain crops. No one can explain the mad rush to get this measure on the statute books. There is as much emergency about it as for a just-engaged young lady picking out a name for her first born—unless, of course, she has some inside knowledge that no one else possesses. But, come to think of it, it could well be that in Mr. Freeman's case he already has inside knowledge that fails to confirm the reported official approximate 26% reduction in corn and grain sorghum acreages for 1961 as compared with 1959-60 planted acreages."

★ ★ ★ ★

The above lines appeared in the writer's article in the June 26 issue of THE MILLER—page 55. Though he makes no claim to the gift of prophecy nor does he have access to a crystal ball, the statement is worth examining in the light of events in the past three months or so.

Starting with the passage of the Feed Grain Law earlier in the year and up to mid-June, the typewriters, computing machines, mimeographs and other tools of the propaganda trade in the giant Washington Agriculture Building were busily clicking, whirring and whirling, turning out rhetorical bologna by the yard. Topflight personnel in the department, more than one of them admitting when pressed that their knowledge of matters agricultural would fit comfortably inside an eye-cup, were turned loose on the "meat loaf and jelly salad dinner" circuit to talk to women's clubs and other groups who will listen to any speaker as long as he is "for free." And we must not forget the captive audiences composed entirely of ASC employees who were gathered together for last minute briefings and brain washings.

From the speaker's podium they heard of the virtues but none of the vices of the Feed Grain Law, the economic dream which on close analysis has much in common with the famous "cat and rat farm scheme" of an earlier day. You know the one. The Sucker starts out with 1,000 rats and 100 cats. The rats were fed to the cats; the cats were slaughtered and their pelts sold to furriers and the cats' bodies fed to the rats, a self perpetuating scheme that involved no cost after the thing got rolling.

In just the same manner, corn farmers are now being compensated for their participation in the feed grain program by the receipt of government-owned corn as "in kind" payments of generous proportions, plus a boost of 14¢ bu. in the price they get from the government for their defaulted collateral. As usual, the taxpayer picks up the tab.

Now let's see what actually took place. Starting April 28 and continuing on a weekly basis until June 8, so-called "progress reports" came out of the U.S. Department of Agriculture propaganda mill.

These reports had to be seen to be believed. After perusing the positively lyrical comment that filled the first portion of these releases, one would get the general idea that the rush to sign up for full scale participation in the corn acreage reduction plan could have had but one parallel—the mad rush by the land-hungry pioneers to preempt 640 acres of virgin soil back in the middle of the past century when the government opened up the Cherokee Strip.

Those weekly "bally-hoo" sheets were always accompanied by a six or eight column tabulation, each of which was indeed a lesson in higher mathematics . . . but on a rather low plane in the light of how far they eventually veered away from the true figures.

The first one, dated April 28, indicated 2,104,053 acres of corn land to be diverted from 1961 production. Each succeeding one showed an even more phenomenal degree of progress. By May 10, it was up to 11,045,005 acres. On May 17, the claimed diverted corn acreage had been stepped up to 14,180,122. The next one took a jump

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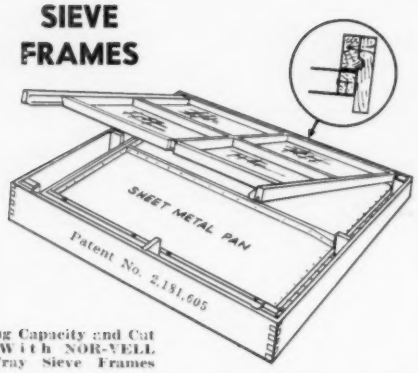

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to 16,775,351 acres. The sheet for June 1 showed the turnstiles were still clicking with 19,054,631 acres supposed to have been pledged to fallow stage and when they finally turned off the animated abacus it had registered the tremendous total of 20,090,511 acres.

Not Rounded, But Exact Figures

However, the really amazing feature of this exercise in mathematical legerdemain is the fact that on every one of what an accountant would call a trial balance, the USDA abascus manipulators never reported a single, solitary rounded out figure for any one of the states from which they received reports. In their all-consuming passion for "accuracy", they list such totals as 2,509,477 acres for Iowa, 1,828,628 for Illinois and 1,048,096 acres for Nebraska.

This "gnat's eyelash" performance, instead of lending a greater degree of authenticity to the compilations, tended to cast doubt. In fact, it was rather akin to the character in Hamlet who said: "The lady doth protest too much, methinks."

It was all just too pat, too perfect, too good to be true and too much to swallow.

After mulling it over for hours to ascertain the reason for all this exasperating detail, your commentator again turns to Shakespeare and becomes even more certain that "there is something rotten" . . . but not in the homeland of Victor Borge.

But there were no misgivings about the accuracy of the figures in the mind of Orville L. Freeman, secretary of agriculture. Pointing with pride to the statistics, he declared: "This response is an expression of confidence in the action of Congress in the passage of emergency legislation, and it fulfills the faith which this administration and the Congress placed in the farmer."

Mr. Freeman was getting ready to strike while the iron was hot, while Congress was in a receptive mood not only to extend the Feed Grain Law for another year but also to act favorably on the Omnibus Farm Bill. The feeling of confidence in the efficacy of the 1961 Feed Grain Law was at an all time high.

The doubts expressed by your commentator months ago in the columns of THE MILLER about the accuracy of these custom-made reports were not just shots in the dark. When he first noticed the new term "slippage", a sort of catch-all receptacle to account for errors of both omission and commission, he began to hope that perhaps Secretary Freeman and his academic cohorts were going to take down their collective hair, don sackcloth and ashes and walk down the sawdust trail to confess that all was not well, that there were king-sized bugs in the entire compilation.

But they didn't. They were in a bad spot, because the psychological impact of such an admission upon the members of Congress could be positively devastating in view of the fact that the 1961 Feed Grain Law just barely squeaked by. They couldn't afford to take the chance. So they waited.

Master politician that he is, Mr. Freeman has a keen sense of timing, and the time was not propitious. If he confessed to terrific errors in the more than 20 million acre diversion for corn, irrespective of who made them, he knew he might as well have the orchestra strike up "Hearts and Flowers" as a fitting accompaniment for any other legislation he ardently desired . . . as it gurgled down the congressional drain. He chose to remain silent.

But apparently the high command in the Agriculture Building decided that so as not to be accused later of burying it completely, they would slip the bad news into a comparatively obscure and little read official brochure

known as the Feed Situation. On page 9 of both the July and September issues, there appears a statement saying just this:

> **Farmers' participation in the 1961 feed grain program resulted in a 15 million acre reduction in corn planting.**

Nothing more. After having shouted from the house tops for months that it was 20 million acres, leaving everybody with that impression, they just swept it under the rug. And if at a later date, USDA is accused of making an error, the brass can always point to the correction.

One does not have to be too good at arithmetic to know that there is a five million acre discrepancy between what Mr. Freeman claimed for months and what he now admits.

In other words, there was a small item of "slippage", to use USDA's own euphemism, to describe an error of 5 million acres—rounded-out figure.

It seems impossible to believe that anyone could not have been cognizant of an error of that dimension. It's like the chap who lost a bass drum in a telephone booth.

But it's a cinch that when Congress reconvenes in January and has an opportunity to evaluate the fast one put over it, Mr. Freeman is going to be forced to admit that he knew of the deception, or that he was too inept to detect it. Or that he can't trust his officials. That's a mighty difficult choice you have before you, Orvy. «

Travelin' MNF-AOM Men

Tough are the travel schedules of men in the trade association business. Take, for instance, C. L. Mast, Jr., and John Sherlock of the Millers National Federation and Donald S. Eber of the Association of Operative Millers. All three met at the USDA Western Laboratory in Albany, Cal., Oct. 2, to talk about wheat flour utilization in foods and feeds. On Oct. 3 Mr. Mast and Mr. Sherlock were in Palo Alto, Cal., for a meeting of the 1962 convention planning committee—venue is Seattle—and then they parted company. Mr. Mast went to Minneapolis for a meeting of the newly appointed industry emergency planning committee Oct. 4 while Mr. Sherlock journeyed to Denver for a sedimentation test demonstration, thereafter going to Washington, D.C. Mr. Eber makes a point of attending every AOM district meeting and prior to the Albany meeting he was in Vineland, Ont., and Spokane, Wash. His fall, winter and spring schedules involve thousands of miles of travel and he is rarely home weekends. «

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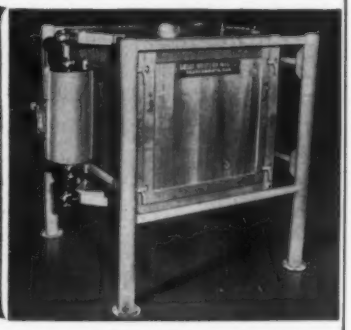

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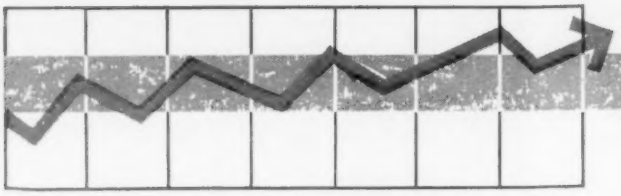


FLOUR PRODUCTION

A Statistical Service Provided Continuously for Readers of The Northwestern Miller for More than Half a Century.

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT.)

Flour production in principal manufacturing areas by mills reporting currently to THE Northwestern MILLER with relationship of production to capacity and to the total estimated output of all mills in the U.S. expressed in percentages:

	Sept. 24-Oct. 1, 1961	*Previous week	Sept. 25-Oct. 2, 1960	Sept. 26-Oct. 3, 1959	Sept. 27-Oct. 4, 1958
Northwest	833,478	868,752	815,022	740,031	787,418
Southwest	1,446,419	1,442,345	1,522,793	1,368,771	1,530,550
Buffalo	227,639	402,278	602,078	542,527	581,307
Central and Southeast	662,589	639,999	645,573	663,314	715,295
Pacific Coast	470,341	466,604	467,599	436,535	486,488
Totals	3,640,466	3,819,978	4,053,065	3,751,178	4,101,058
Percentage of total U.S. output	78	78	75	75	75
Estimated total U.S. production	4,667,264	4,897,408			
Accumulated total this month	20,357,371	15,690,107			

*Revised.

	—Percentage of capacity operated in 5-day week—					Crop year flour production ——July 1 to——	
	Sept. 24-Oct. 1, 1961	Previous week	Sept. 25-Oct. 2, 1960	Sept. 26-Oct. 3, 1959	Sept. 27-Oct. 4, 1958	Oct. 1, 1961	Oct. 2, 1960
Northwest	112	117	112	102	118	10,085,939	9,813,849
Southwest	110	110	115	106	116	19,632,963	18,321,278
Buffalo	45	80	115	110	122	6,890,695	5,984,346
Central and S. E.	103	100	99	103	125	7,876,816	8,149,235
Pacific Coast	100	99	100	94	154	6,043,085	5,776,672
Totals	99	104	110	104	123	50,529,498	48,045,380

NORTHWEST

Minneapolis

	5-day week capacity	Flour output	% capacity
Sept. 24-Oct. 1	185,500	229,916	124
Previous week	185,500	*243,956	132
Year ago	194,500	244,880	126
Two years ago	231,000	207,863	90
Five-year average			96
Ten-year average			96

*Revised.

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, Montana and Iowa:

	5-day week capacity	Flour output	% capacity
Sept. 24-Oct. 1	558,870	603,562	108
Previous week	558,870	*624,796	112
Year ago	534,250	569,091	107
Two years ago	494,500	532,168	108
Five-year average			104
Ten-year average			96

*Revised.

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Wisconsin, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	5-day week capacity	Flour output	% capacity
Sept. 24-Oct. 1	642,700	662,589	103
Previous week	642,700	*639,999	100
Year ago	651,450	645,573	99
Two years ago	643,750	663,314	103
Five-year average			94
Ten-year average			88

*Revised.

SOUTHWEST

Kansas City

	5-day week capacity	Flour output	% capacity
Sept. 24-Oct. 1	225,250	284,522	126
Previous week	225,250	253,066	112
Year ago	254,250	281,395	111
Two years ago	221,750	267,064	120
Five-year average			106
Ten-year average			100

Representative Mills, Outside of Kansas City (Including Wichita and Salina)

	5-day week capacity	Flour output	% capacity
Sept. 24-Oct. 1	1,084,395	1,161,897	107
Previous week	1,084,395	*1,189,279	110
Year ago	1,067,250	1,241,398	116
Two years ago	1,068,800	1,101,707	103
Five-year average			109
Ten-year average			100

*Revised.

BUFFALO

	5-day week capacity	Flour output	% capacity
Sept. 24-Oct. 1	505,500	227,639	45
Previous week	505,500	402,278	80
Year ago	522,000	602,078	115
Two years ago	494,500	542,527	110
Five-year average			109
Ten-year average			104

PACIFIC COAST

Principal Mills on the Pacific Coast

California, Oregon and Washington Mills

	5-day week capacity	Flour output	% capacity
Sept. 24-Oct. 1	471,200	470,341	100
Previous week	471,200	*466,604	99
Year ago	466,500	467,599	100
Two years ago	466,500	436,535	94
Five-year average			96
Ten-year average			89

*Revised.

DURUM PRODUCTS OUTPUT

Durum products output of mills reporting to THE Northwestern MILLER, in sacks, based on five-day week:

	5-day week capacity	Wkly. production	% of capacity
Sept. 24-Oct. 1	165,500	180,327	109
Previous week	165,500	*196,381	117
Year ago	156,500	209,951	134

	Crop year production
July 1-Oct. 1, 1961	2,232,751
July 1-Oct. 2, 1960	2,311,194

*Revised.

More Changes in Canadian Adjustments

New price adjustment figures announced by the Canadian Wheat Board and in effect Oct. 6 are as follows: To U.K. and other European destinations via Canadian and U.S. Atlantic ports, also via St. Lawrence, Churchill, Canadian and U.S. Pacific ports, 4⅝¢ bu.; to other countries, excluding U.S. and territories, from Canadian and U.S. Atlantic ports, 12⅛¢ bu.; from St. Lawrence and Churchill, 11⅝¢ bu.; Canadian and U.S. Pacific ports, 13⅝¢ bu. The above adjustment prices apply to wheat milled in Western Canada. For wheat milled in the Bayport area the rate is ½¢ bu. less, while for wheat milled in the Humberstone area and in the Toronto area the rate is 1¢ bu. less. Wheat milled in the Montreal area is 2¢ bu. less. «

Production for Sept. 24-Oct. 1 is at the left; for Oct. 1-8 appears here

WEEKLY FLOUR PRODUCTION, IN SACKS (CWT.)

Flour production in principal manufacturing areas by mills reporting currently to THE Northwestern MILLER with relationship of production to capacity and to the total estimated output of all mills in the U.S. expressed in percentages:

	Oct. 1-8, 1961	Previous week	Oct. 2-9, 1960	Oct. 3-10, 1959	Oct. 4-11, 1958
Northwest	870,324	833,478	815,598	795,358	794,910
Southwest	1,491,192	1,446,419	1,501,259	1,504,964	1,519,694
Buffalo	344,912	227,639	620,129	509,152	547,030
Central and Southeast	647,481	662,589	642,917	646,111	594,825
Pacific Coast	460,425	470,341	434,900	476,858	537,784
Totals	3,814,334	3,640,466	4,014,803	3,932,443	3,994,243
Percentage of total U.S. output	78	78	75	75	75
Estimated total U.S. production	4,890,172	4,667,264			
Accumulated total this month	4,890,172				

	—Percentage of capacity operated in 5-day week—					Crop year flour production ——July 1 to——	
	Oct. 1-8, 1961	Previous week	Oct. 2-9, 1960	Oct. 3-10, 1959	Oct. 4-11, 1958	Oct. 8, 1961	Oct. 9, 1960
Northwest	117	112	112	110	116	10,956,263	10,629,447
Southwest	114	110	114	117	117	21,124,155	19,822,537
Buffalo	68	45	119	103	112	7,235,607	6,604,475
Central and S. E.	101	103	99	100	100	8,524,297	8,792,152
Pacific Coast	98	100	93	102	166	6,503,510	6,211,572
Totals	104	99	109	109	118	54,343,832	52,060,183

NORTHWEST

Minneapolis

	5-day week capacity	Flour output	% capacity
Oct. 1-8	185,500	248,655	134
Previous week	185,500	229,916	124
Year ago	194,500	244,880	126
Two years ago	231,000	245,271	106
Five-year average			96
Ten-year average			96

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, Montana and Iowa:

	5-day week capacity	Flour output	% capacity
Oct. 1-8	558,870	621,669	111
Previous week	558,870	603,562	108
Year ago	534,250	570,718	107
Two years ago	494,500	550,087	111
Five-year average			104
Ten-year average			96

CENTRAL AND SOUTHEASTERN

Mills in Illinois, Ohio, Michigan, Wisconsin, Indiana, Kentucky, North Carolina, Tennessee, Virginia, Georgia and eastern Missouri:

	5-day week capacity	Flour output	% capacity
Oct. 1-8	642,700	647,481	101
Previous week	642,700	662,589	103
Year ago	651,450	642,917	99
Two years ago	643,750	646,111	100
Five-year average			94
Ten-year average			88

SOUTHWEST

Kansas City

	5-day week capacity	Flour output	% capacity
Oct. 1-8	225,250	289,405	128
Previous week	225,250	284,522	126
Year ago	254,250	270,412	106
Two years ago	221,750	286,214	129
Five-year average			106
Ten-year average			100

Representative Mills, Outside of Kansas City (Including Wichita and Salina)

	5-day week capacity	Flour output	% capacity
Oct. 1-8	1,084,395	1,201,787	111
Previous week	1,084,395	1,161,897	107
Year ago	1,067,250	1,230,847	115
Two years ago	1,068,800	1,218,750	114
Five-year average			109
Ten-year average			100

BUFFALO

	5-day week capacity	Flour output	% capacity
Oct. 1-8	505,500	344,912	68
Previous week	505,500	227,639	45
Year ago	522,000	620,129	119
Two years ago	494,500	509,152	103
Five-year average			109
Ten-year average			104

Millfeed Production

Mills in the Northwest, Southwest and at Buffalo, representing 75% of the combined flour milling capacities of those areas, reported production of 51,070 tons of millfeed for Oct. 1-8, compared with an output of 55,421 in the corresponding week a year ago. Production for the previous week of Sept. 24-Oct. 1 was 47,317, compared to 55,476 in the corresponding week of 1960.

PACIFIC COAST

Principal Mills on the Pacific Coast
California, Oregon and Washington Mills

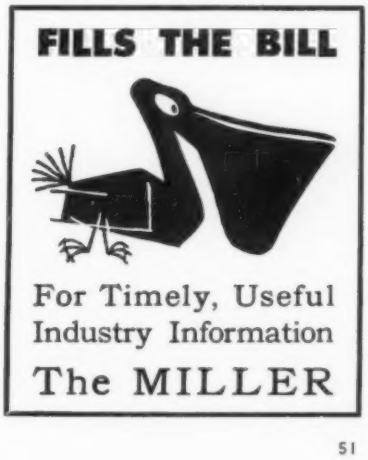
	5-day week capacity	Flour output	% capacity
Oct. 1-8	471,200	460,425	98
Previous week	471,200	470,341	100
Year ago	466,500	434,900	93
Two years ago	466,500	476,858	102
Five-year average			96
Ten-year average			89

DURUM PRODUCTS OUTPUT

Durum products output of mills reporting to THE Northwestern MILLER, in sacks, based on five-day week:

	5-day week capacity	Wkly. production	% of capacity
Oct. 1-8	165,500	198,808	120
Previous week	165,500	180,327	109
Year ago	156,500	212,043	135

	Crop year production
July 1-Oct. 8, 1961	2,431,559
July 1-Oct. 9, 1960	2,523,237



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CANADIAN COMMENTARY

Red China's Wheat Credits Extended

CANADA'S agricultural minister, Alvin Hamilton, has confirmed the doubling of the credit to be extended to Red China for the purchase of Canadian wheat. The credit line now stands at $100 million.

Mr. Hamilton's statement came at a time when reports were suggesting that China is in financial difficulties and might be unable to meet her international commitments—to both Canada and Australia.

Admitting that the Chinese sales are a "calculated risk," Mr. Hamilton cautioned that people should not pay too much attention to speculative analysis of a country's ability to meet its commitments.

China is still in the market for Canadian and Australian wheat. Deals will extend well into 1962 provided financial credits can be obtained. Some Ottawa reports indicate that if China should default on her March payment for Canadian wheat shipped this year, further shipments would be halted. But there is no confirmation of this statement in official circles.

Alvin Hamilton Makes Like Wheat Salesman

Meanwhile, Mr. Hamilton is still making like the big time wheat salesman. After the Food and Agriculture Organization meeting in Rome next November, he plans to visit Poland, Yugoslavia, Czechoslovakia and possibly Romania with the object of expanding markets for wheat.

Comments a critic: "He appears to ignore the ditch digging work of the Canadian Wheat Board over the years, to say nothing of the private enterprise of grain men and flour millers in expanding Canadian markets. He sees a chance to glean political credit and he's cashing in fast."

Canada and the Common Market

Britain appears to be receiving support for her entry into the European Common Market from everybody in Canada except the government. The grain trade, including farm organizations, is backing her entry into the European theatre, and the same is true of the Canadian Chambers of Commerce and various other groups vitally concerned with overseas trade. The Canadian government appears to be the only body in Canada which does not see an expansion of international trade through Britain's entry into ECM.

Official Wheat Crop Estimate

The wheat crop for all Canada has been estimated at 260,500,000 bu. by the Dominion Bureau of Statistics. This compares with the Sept. 1 estimate of 252,495,000 bu. The total dipped sharply from last year's crop of 489,600,000 bu. and the 10-year average of 497,400,000 bu.

All of the change took place in the Prairie Provinces where this year's outturn is now placed at 239,000,000 bu. compared with 231,000,000 on Sept. 1. Manitoba's production forecast was increased by 2,000,000 bu. to 30,000,000 bu.; Saskatchewan's from 121,000,000 bu. to 124,000,000 bu., and Alberta's increased by 3,000,000 bu. to 83,000,000 bu. There were also minor upward revisions for the prairies in the production of oats, barley, flax and rye.

Canadian Export Clearances Healthy

Canada's combined wheat and flour exports in August, the initial month of the current crop year, totaled 38,425,000 bu., and included 2,800,000 bu. in the form of flour. This was the first time since 1945 that August clearances of wheat have reached 35,600,000 bu. The movement was nearly 12,000,000 bu. greater than August shipments a year ago. Heaviest shipments during the month, according to the statistics branch of the Board of Grain Commissioners, were made up of 8,100,000 bu. to Mainland China; 6,700,000 bu. to the U.K.; 5,500,000 bu. to Japan, and 3,200,000 bu. to West Germany. More than 14,200,000 bu. cleared from Canadian Pacific coast ports, while Churchill and Montreal each cleared 6,200,000 bu. «

Stanley N. Jones, President Of Winnipeg Exchange, Retires

Stanley N. Jones, whose career serving the grain trade of Canada totals 47 years, has retired from presidency of the Winnipeg Grain Exchange, which position he held the past 15 of those years. His successor, and former secretary of the exchange, is James W. Clarke, whose background in agriculture also covers a broad range of activity.

Stanley N. Jones

James W. Clarke

Mr. Jones was born on a farm near Roland, Man., in 1893, educated in Roland's public and high schools, and introduced to farming early by assisting his father in the machinery business—filling the duties of general salesman and repairman.

His first job away from home was with the Bank of Hamilton, which he served at Roland before transfer to Winnipeg. In 1912 Mr. Jones joined the Saskatchewan Cooperative Elevator Co., at that time just opening an office in Winnipeg under direction of F. N. McLaren. In 1915 Mr. Jones resigned to join the export and shipping department of N. Bawlf Grain Co.

He served with the Royal Flying Corps. in 1917, then rejoined the Bawlf firm in 1919. In 1920 he became manager of the firm's office in Toronto. Mr. Jones returned to Winnipeg to start his own business as a cash grain broker in 1921, and since then has been very active in operation of the Winnipeg Grain Exchange, serving on the council for many years. He was elected vice president in 1944 and president in 1946.

The new exchange president, Mr. Clarke, holds B.S. and M.S. degrees in agriculture from the University of Saskatchewan. He served as a pilot with the R.C.A.F. during World War II, was employed as an economist with the Dominion Department of Agriculture at Saskatoon, and after further study at Iowa State University spent seven years at Kindersley, Sask., developing a vocational agricultural program. While working in the field, through teaching and research, Mr. Clarke pioneered Farm Management Club work in Saskatchewan, a teaching technique which recently has spread rapidly throughout the prairie provinces and has helped farmers to establish farms on a business-like basis. «

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3. **Filtering efficiency:** Filters non-toxic dusts 100 times smaller than the eye can see.
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6. **Simplicity and economy:** Only 4 tough, long-wearing inter-locking parts — all washable. Pure latex filter outwears throw-away type more than 100 to 1.

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The microfilm is in the form of positive 35 mm., on suitably labeled plastic reels, each covering an entire volume. The labeled reels are packed in kraftboard cartons ready for storage on library shelves or for use in a microfilm viewer.

Orders should be addressed to University Microfilms, Inc., 313 N. First Street, Ann Arbor, Mich.

TICKER REPORT...

THE NEW YORK STOCK EXCHANGE

Quotations on baking, milling and allied stocks listed on the New York Stock Exchange:

	—1961—		Oct. 2, 1961	Oct. 9, 1961
	High	Low	Close	Close
Allied Mills, Inc.	52¾	36½	43½	43½
Allis-Chalmers	29½	21	22⅜	21
American Bakeries Co.	47⅜	36	41¾	42⅜
American Cyanamid	50	39¾	40⅛	41⅞
Archer-Daniels-Midland Co.	43⅜	33½	39	38⅞
Borden	68¾	55⅜	64⅛	67
Continental Baking Co.	58	44⅛	53½	54½
Pfd. $5.50	111	103	105	105
Corn Products Refining Co.	59⅞	45⅝	54⅝	53⅜
Crown Zellerbach Corp.	61½	51¼	58¾	61¼
Pfd. $4.20	95½	89¾	....	92⅛
Dow Chemical	85⅜	70	78	77⅛
General Baking Co.	10¼	6½	6¾	6⅝
Pfd. $8	140	81	87	81
General Foods Corp.	96	68⅝	93½	92¼
General Mills, Inc.	38¾	31	34⅞	34⅛
Pfd. 5%	113	106¼	109¾	109½
Merck & Co.	91½	77⅜	81⅜	82¼
Monsanto Chemical Co.	58⅜	44⅛	52⅞	54
National Biscuit Co.	85¾	70½	77½	77
Pfizer, Chas.	44⅞	30⅝	40⅛	43⅞
Pillsbury Co.	67¾	44⅛	61½	62½
Procter & Gamble	100½	73	96	96¼
Quaker Oats Co.	89⅜	57½	84¾	89
Pfd. $6	145	131	142	142
St. Regis Paper Co.	40½	31½	37½	39
Standard Brands, Inc.	78½	52¼	76	75
Sterling Drug	96	67	83½	90⅜
Sunshine Biscuits, Inc.	116	101½	114¼	114¼
United Biscuit of America	45½	33¾	35½	35¼
Ward Baking Co.	13⅞	10	10	10¼
Pfd. $5.50	86¾	73⅝	75	75
West Va. Pulp & Paper Co.	42¾	33⅛	34⅞	34¾

Stocks not traded:

	Bid	Asked
Allis-Chalmers, $3.25 Pfd.	99	102½
Corn Products Refining Co.	92	93½
Merck & Co., $3.50 Pfd.	81½	82½
National Biscuit Co., $7 Pfd.	153	153½
Pillsbury Co., $4 Pfd.	96	98
St. Regis Paper Co., $4.40 Pfd.	97½	99½
Standard Brands, Inc., $4.50 Pfd.	75	76
West Va. Pulp & Paper Co., Pfd.	96	97

THE AMERICAN STOCK EXCHANGE

Quotations on baking, milling and allied stocks listed on the American Stock Exchange:

	—1961—		Oct. 2, 1961	Oct. 9, 1961
	High	Low	Close	Close
Burry Biscuit Corp.	35⅛	19¼	26¾	28½
Horn & Hardart Corp. of N. Y.	53	36¼	37½	37⅜
Pfd. $5	103	96	98	99½
Pfd. $7	189¾	145	161	159
Wagner Baking Co.	10¾	4	6⅛	6

Stocks not traded:

	Bid	Asked
Seaboard Allied Mills	7	7¼
Wagner Baking Co., Pfd.	72	77

CANADIAN STOCKS

	—1961—		Sept. 29, 1961	Oct. 6, 1961
	High	Low	Close	Close
Canada Bread	6⅜	3¾	6⅛	*7
Pfd. B	52½	49⅛	*55½	*55⅛
Can. Bakeries	8½	5	5	5¼
Can. Food Prod.	9	4½	6¾	6¾
1st Pfd.	56	44⅛	52½	50
2nd Pfd.	55	37½	48	49
Catelli Food	39⅛	32⅝	*32½	33¼
Cons. Bakeries	11⅜	7½	9½	9½
Dover Ind.	12¼	10¼	11	11¼
Pfd.	10	9½	*9	9⅞
Federal Grain	69½	47	55	54
Pfd.	29⅛	27⅜	28½	29
Gen. Bakeries	11½	7¼	11½	11
Maple Leaf Mills	17½	12¼	*17⅝	16⅞
Pfd.	110	100	101	100½
McCabe Grain	35½	32¼	35½	35
Ogilvie Flour	56¼	47	54½	55½
Pfd.	145	137	140	140
United Grain, A	16⅛	15½	16	*15
Weston, G., A	20¾	17¼	20½	20¼
B	22½	18½	22½	21⅞
Pfd. 4½%	98	90	94	94
Pfd. 6%	110	105	105	109

*Less than board lot.

Registered Trade Mark

Quality — Satisfaction — Service

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SHUTTLE BRAND

SILK—NYLON
BOLTING CLOTH

Manufactured for more than a century by

TRIPETTE & RENAUD

Sailly-Saillisel and Paris (France)

Sole Importers for U.S.A. and Canada

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Distributors

J. K. Howie Co. Minneapolis, Minn.

Capital Corrugating Co. N. Kansas City, Mo.

M.M.C. Sales Corp. Buffalo, N. Y.; Dover, Ohio

LEADING FLOUR IMPORTERS ABROAD

Many of the firms appearing in this list are available to handle the importation of other products besides flour. Some specialize additionally in cereals, some in bakers' sundries and others in feed grains and ingredients. Most of them have connections in adjacent countries and are equipped to handle both import and export business on an extensive basis. For a list of recommended firms dealing in specific commodities or in specific countries write to THE Northwestern MILLER, P.O. Box No. 67, Minneapolis 40, Minn., U.S.A.

ENGLAND

H. Cohen & Co., Ltd.
Hambro House, Vintners' Place
LONDON, E.C. 4
Cable Address: Bortrite, London

Mardorf, Peach & Co., Ltd.
52, Mark Lane LONDON, E.C. 3
Cable Address: "Dorfench," London

Pillman & Phillips, Ltd.
26, Corn Exchange Chambers
Seething Lane LONDON, E.C. 3
And at Bristol and Liverpool

Vaughan Thomas & Co., Ltd.
The Corn Exchange Building
52/57, Mark Lane LONDON, E.C. 3
Cable Address: "Avaumas," London

GERMANY

Einfuhrhandel Mannheim
Hans Werle
MANNHEIM/GERMANY, E2., 1-3
Cable Address: "Einfuh:" Telex 0463270

DENMARK

Brodr. Justesen
COPENHAGEN
Cable Address: "Justesens," Copenhagen

SCOTLAND

Farquhar Brothers
50 Wellington Street GLASGOW,C.2
Cable Address: "Glencairn," Glasgow

McConnell & Reid, Ltd.
19 Waterloo St. GLASGOW
Cable Address: "Marvel," Glasgow

D. T. Russell & Baird, Ltd.
Also at Leith, Belfast and Liverpool
106 Hope Street GLASGOW,C.2
Cable Address: "Delight"

HOLLAND

Bulsing & Heslenfeld N. V.
Established 1885
Damrak 20-22
AMSTERDAM (C)
Cable Address: "Heslenfeld," Amsterdam

STOLP & CO., LTD.
47-48 Damrak AMSTERDAM
Cable Address: "Cleo"

Gebrs. Van Den Bergh's N. V.
ROTTERDAM
Cables: Locomotion Rotterdam

N. V.
Algemeene Handel-en Industrie Maatschappy
"MEELUNIE"
Heerengracht 209 AMSTERDAM

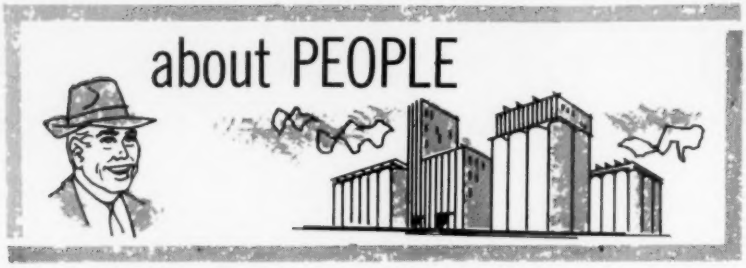
N. V. Agentuur & Commissiehandel
v/h P. C. Vis & Co.
AMSTERDAM
Cable Address: "Visco"

Luchsinger, Meurs & Co.'s
Handelsmaatschappij, N.V.
AMSTERDAM—(C)
Cable Address: "Matluch"

M. WITSENBURG JR. N. V.
Postbox 945 AMSTERDAM C.
Cable Address: "Witburg"

GRIPPELING & VERKLEY N. V.
Flour Specialists Since 1889
AMSTERDAM
Cable Address: Bygrip, Amsterdam

Millers in 44 Overseas Nations Read Every Issue of the Miller



John L. Caldwell has been named Chicago sales manager for Russell Miller-King Midas Mills, announces **W. R. Heegaard**, vice president in charge of flour sales. With the firm since 1948, Mr. Caldwell was assistant to the district manager at the Buffalo mill office. The Chicago branch is part of the company's central sales district with headquarters at Alton, Ill.

●

Selected to head up the new Chicago office of the Bunge Corp. is **Harvey Jaunich**. A native Minnesotan, Mr. Jaunich joined Bunge late last year after several years of experience with Harris, Upham & Co. He is a member of the Chicago Board of Trade and will represent Bunge on that market. Announcing the opening of the Chicago office was **Walter Klein**, president of the corporation.

Harvey Jaunich

●

Breaking his journey at Prestwick, Scotland, on his way for a visit to the U.S. recently, **J. C. Graham**, a director of Thomas Robinson & Son, Ltd., the British firm of milling engineers, was informed that he had become a grandfather. Parents of a baby boy were son, **William**, and daughter-in-law, **Nancy**. Mr. Graham, Jr., is with the Millers Supply Co., the milling machinery firm of Liverpool, England.

●

Named manager of the Portland office of Cargill, Inc.'s grain division is **Lloyd Nelson**. He succeeds **John Sarsfield** who has retired. Mr. Nelson joined Cargill in 1934 at Carbury, N.D., and from there went to Great Falls, Mont., to manage the firm's office there, moving to Portland in 1954. Mr. Sarsfield is a veteran of 42 years in the grain business and joined Cargill when that firm acquired Kerr-Gifford Grain Co. in 1953.

●

Dunwoody Industrial Institute of Minneapolis, home of the highly reputed Dunwoody Baking School, has a new board chairman—**Paul B. Wishart**, president of Minneapolis-Honeywell Regulator Co. Elected a vice president was **Gen. Edwin W. Rawlings**, executive vice president of General Mills, Inc., reports **Joseph R. Kingman, Jr.**, president, who was re-elected. Also continuing in office are **George C. Crosby**, vice president; **John S. Pillsbury, Jr.**, secretary; **John A. Butler**, director of the school, and **Walter F. Sahlin**, associate director. Mr. Sahlin is also assistant secretary and treasurer. **A. J. Vander Voort**, THE MILLER's technical baking editor, is head of the baking school.

●

A former executive vice president of General Mills, Inc., **A. Z. Kouri**, has been named a director of Food Corporation of America, Inc., Minneapolis. Mr. Kouri resigned as head of GMI's consumer food division last year and now directs the Kouri Oil Co. in Wichita Falls. FCA was formed earlier this year by a group of Minneapolis and St. Paul businessmen to acquire independent food processing plants throughout the U.S. The company recently purchased Plymouth Rock Provision Co., Inc., of New York for $5 million.

A. Z. Kouri

●

Now head of the cereal chemistry laboratory of the yeast division of Red Star Yeast & Products Co., Milwaukee, is **Richard T. Fukuda**. He will supervise the control bake shop and will conduct research in the field of applied baking technology, says **Dr. J. A. Thorn**, manager of the yeast division laboratories. Mr. Fukuda replaces **Dr. Paul Merritt** who retired recently after many years with Red Star. Other changes announced by the firm include the appointment of **Jus-**

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ELEVATORS, MILLS & PLANTS LOCATED—

Quebec City • Montreal • Prescott • Toronto • Port Colborne • Goderich • Baden
Chatham • Sarnia • St. Boniface • Medicine Hat • Calgary • New Westminster

tin Gutting as bakery technical service representative in Dallas, and **Joseph Becker** as bakery service technician in the St. Paul, Minn., branch. And **Jerry Wesslen**, formerly in Milwaukee, is now area manager for bakery sales in Red Star's central district with headquarters in Cleveland.

●

Appointment of **Wallin D. Bynell** of Minneapolis as general manager of the grain division of Doughboy Industries, New Richmond, Wis., has been announced by **Edwin J. Cashman**, president. Formerly vice president and general manager of Peavey Feed Mills, Mr. Bynell has had more than 25 years' experience in the grain business. He will represent Doughboy on the trading floor of the Minneapolis Grain Exchange, succeeding Irwin M. Solum who died last month.

Wallin D. Bynell

●

Former executive vice president of Archer-Daniels-Midland Co., **Richard G. Brierley**, has been named vice president and secretary of the Drackett Co., Cincinnati. Firm manufactures household chemicals and plastic products. Mr. Brierley will head the company's acquisition program, including planned expansion into European markets.

●

Renamed to their posts by the directors, after their own re-election by the stockholders, were the officers of Colorado Milling & Elevator Co. They are **George M. Hopfenbeck**, chairman of the board; **Earl F. Cross**, president and chief executive officer; **J. Lawson Cook**, executive vice president, and **M. E. Ehrlich**, secretary.

●

New plant manager for Ogilvie Flour Mills Co., Ltd., at Montreal is **John F. Blakney**, until his move plant manager at Winnipeg. **D. I. C. MacLean** has been named plant manager for Winnipeg-Keewatin and will be located in Winnipeg and have jurisdiction over both plants. **E. Warr** moves from the firm's Winnipeg office to be plant manager at the Keewatin mill. Mr. Blakney joined Lake of the Woods Milling Co., Ltd., now an affiliate of Ogilvie, after service in the Royal Canadian Air Force overseas, in 1947. He was assigned to the Brantford, Ont., plant and became assistant to the manager in 1949. He moved to Winnipeg in 1957. Mr. MacLean joined Ogilvie in 1934 as a stenographer - bookkeeper and has served since as a sales representative, accountant and office manager (Vancouver) and as plant manager for a short period at Edmonton and then at Medicine Hat transferring to Keewatin in 1958. Mr. Warr joined Ogilvie as a filing clerk in 1938 and his subsequent functions include grain records, stenography, city and country orders, and later worked in the accounting department. He served five years in the Canadian army during World War II and returned to Ogilvie in 1946. «

John F. Blakney

D. I. C. MacLean

Obituaries

MRS. NELLIE E. MAAS, 76, mother of Russell B. Maas, president, Screw Conveyor Corp., Hammond, Ind., Oct. 5, following a lingering illness. In addition to Mr. Maas, survivors include her husband, Arthur M., and another son, Ellis P. Maas. Mrs. Maas had been a resident of Elmhurst, Ill., since 1924.

CYRIAKUS G. MAYER, 82, plant superintendent for Russell-Miller Milling Co., until his retirement in 1947, at Great Falls, Mont. His interest in the past few years had been concentrated on farming. Born in Bavaria, Mr. Mayer came to the U.S. in 1904, settling in Cincinnati. He married Elizabeth Blenke in Newport, Ky., in 1906. Surviving are his widow, a daughter, Mrs. Helen Hilstad, Hopkins, Minn., and three sons, Frank J. of Sydney, Mont.; Toby A. of Midway City, Cal., and Albert J. of Wayzata, Minn. Mr. Albert Mayer is with Russell Miller-King Midas Mills.

GEORGE WORK, 74, retired assistant vice president of Colorado Milling & Elevator Co., at the Mayo Clinic, Rochester, Minn. Mr. Work joined CM&E in 1911 and established the company's general traffic department. Because of his analytical talents and clear explicit writing ability he was known by the affectionate title of "The Professor" among his associates.

MRS. EDNA GLADNEY, 75, at Fort Worth, Texas, after a long illness. She was the widow of the founder of Gladiola Flour Mill, Sherman, Texas, later purchased by Tex-O-Kan and then sold to Fant Milling Co. Mrs. Gladney's work with children inspired the 1941 movie "Blossoms in the Dust," telling the story of her life as the superintendent of a Fort Worth home for unwed mothers, now named for her. Greer Garson played Mrs. Gladney and Walter Pidgeon Mr. Gladney. «

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Today, from its plants and offices all across Canada, Ogilvie produces and sells an astonishing variety of products.

MANUFACTURERS OF: *Ogilvie* All Purpose, Whole Wheat, Graham Flours—*Ogilvie* Cake Mixes, Hot Roll Mix, Pie Crust Mix—*Ogilvie* Instant & Quick Cooking Oats, Scotch Oatmeal, Wheat Hearts, Rolled Wheat, Vita-B Cereal, Cracked Wheat—*Ogilvie* Tonic Wheat Germ, Corn Meal, All Purpose Health Bran—*Ogilvie* Pot and Pearl Barley.

THE OGILVIE FLOUR MILLS CO. LIMITED

Mills at: Montreal • Fort William • Winnipeg • Medicine Hat • Edmonton *Cable Address:* OGILVIE MONTREAL—all codes used

WHERE THEY ARE MEETING

October

Oct. 21-22—Nebraska Bakers Assn., annual convention; Sheraton Fontenelle Hotel, Omaha, Neb.; sec., L. F. O'Konski, Jr., 1806 Chicago St., Omaha.

Oct. 24—Retail Master Bakers Association of Western Pennsylvania, annual clinic; South Vocational High, Pittsburgh, Pa.; sec., J. P. Byrnes, Byrnes & Keifer Co., 1133 Penn Avenue, Pittsburgh, Pa.

Oct. 27-28—District 11, Association of Operative Millers; Barringer Hotel, Charlotte, N.C.; sec., Marvin D. Brown, Spartan Grain & Mill Co., Spartanburg, S.C.

Oct. 30-31—Washington Association of Wheat Growers, 2nd Pacific Northwest Wheat Conference; Davenport Hotel, Spokane, Wash.; chm., C. Wes Eckhardt, Box 437, Ritzville, Wash.

November

Nov. 3-4—Districts 3 and 5, Association of Operative Millers, Cincinnati Section A.A.C.C., joint meeting; Wolford Hotel, Danville, Ill.; sec., R. H. Artz, 720 South Amos, Springfield, Ill.

Nov. 6—Connecticut Bakers Assn., annual convention; Roger Smith Hotel, Waterbury; sec., Charles Barr, 584 Campbell Ave., West Haven 16, Conn.

Nov. 6-8—Montana Grain Growers Assn., 6th annual convention; Hotel Rainbow, Great Falls, Mont.; sec., Dr. E. R. Hehn, P.O. Box 11, Great Falls, Mont.

Nov. 13-14—Washington Association of Wheat Growers, annual convention; Walla Walla, Washington; sec., Geo. W. Johnson, Ritzville, Wash.

Nov. 13-14—New England Bakers Assn., fall convention; Sheraton-Plaza Hotel, Boston, Mass.; sec., William E. Bowman, 945 Great Plain Ave., Room 9, Needham 92, Mass.

Nov. 17-18—District 12, Association of Operative Millers; Newhouse Hotel, Salt Lake City, Utah; sec., Joseph J. Keiser, Salt Lake City Flour Mills, Salt Lake City.

December

Dec. 6-8—National Association of Wheat Growers, annual convention; Boise, Idaho; sec., Harold West, Idaho Wheat Growers Assn., Boise.

Dec. 9—District 2, Association of Operative Millers; Aladdin Hotel, Kansas City, Mo.; sec., George Smutny, Entoleter, Inc., Kansas City.

Dec. 15-16—District 1, Association of Operative Millers; Wichita, Kansas; sec., Richard Magergurth, Air Age Equipment Inc., Topeka.

CALENDAR FOR 1961-62

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1962

January

Jan. 9—Michigan Bakers Assn., 10th annual Bakers Educational Conference; Kellogg Center, Michigan State University, East Lansing, Mich.; sec., Fred Hill, Hill's Bakery, Cedar Springs, Mich.

Jan. 16-18—Hard Red Winter Wheat Workers, annual conference; Kellogg Center, Lincoln, Neb.; chairman, A. M. Schlehuber, Oklahoma State University, Dept. of Agronomy, Stillwater, Okla.

Jan. 28-30—Potomac States Bakers Assn., annual convention; Lord Baltimore Hotel, Baltimore, Md.; pres., Charles J. Schupp, 126 Mathieson Bldg., Baltimore 2.

Jan. 31—Potomac States Bakers Assn., post convention executive committee meeting; Lord Baltimore Hotel, Baltimore, Md.

February

Feb. 11-13—Pennsylvania Bakers Assn., annual convention; Bellevue Stratford Hotel, Philadelphia, Pa.; sec., Theo. Staab, 600 N. Third St., Harrisburg, Pa.

March

March 2-3—District 11, Association of Operative Millers; Roanoke Hotel, Ro-

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Mills at
Montreal, Keewatin, Winnipeg, Medicine Hat

HEAD OFFICE: MONTREAL WESTERN OFFICE: WINNIPEG

anoke, Va.; sec., Marvin D. Brown, Spartan Grain & Mill Co., Spartanburg, S.C.

March 9-10—District 7, Association of Operative Millers; Hilton Hotel, Fort Worth, Texas; sec., Henry H. Stark, Ross Machine & Mill Supply Co., Oklahoma City, Okla.

March 19-20—Grain and Feed Dealers National Assn., pre-convention secretaries' circle meetings; Denver-Hilton Hotel, Denver, Colo.; sec., Herbert L. Sharp, 401 Folger Bldg., 725 15th Street, Washington, D.C.

March 19-26—Associated Retail Bakers of America, National Retail Bakers Week; chm., Walter R. Schuchardt, ARBA, 731-35 W. Sheridan Rd., Chicago 13, Ill.

March 21-23—Grain and Feed Dealers National Assn., annual convention; Denver-Hilton Hotel, Denver, Colo.; sec., Herbert L. Sharp, 401 Folger Bldg., 725 15th Street, Washington, D.C.

April

April 9-11—Pacific Bakers Northwest Conference, annual meeting; Multnomah Hotel, Portland, Ore.; sec., Roger Williams, P.O. Box 486, Salem, Ore.

April 9-11—Texas Bakers Assn., annual convention; Hotel Texas, Ft. Worth; sec., Guy Lichyter, 1121 National Building, Dallas 1, Texas.

April 26-28—Southern Bakers Assn., annual convention; Boca Raton Hotel, Boca Raton, Fla.; sec., Benson L. Skelton, Henry Grady Bldg., 26 Cain St., N.W., Atlanta 3, Ga.

April 29-May 2—Millers National Federation, annual convention; Hotel Olympic, Seattle, Wash.; sec., John J. Sherlock, 309 W. Jackson Blvd., Chicago 6.

April 29-May 2—Associated Retail Bakers of America, annual convention and exhibition; Bellevue-Stratford Hotel, Philadelphia, Pa.; sec., Miss Trudy Schurr, 731-735 W. Sheridan Rd., Chicago 13, Ill.

May

May 4-5—Illinois Grain Dealers' Assn., 69th annual convention; St. Nicholas Hotel, Springfield, Ill.; sec., Donald E. Palmer, 910 Lehmann Bldg., Peoria, Ill.

May 6-8—National Council of the Baking Industry, annual conference; Queen Elizabeth Hotel, Montreal, P.Q., Canada; dir., R. H. Ackert, 4 N. Sherbourne St., Suite 105, Toronto 5, Ont., Canada.

May 14-17—Association of Operative Millers, annual technical conference and trade show; Denver-Hilton Hotel, Denver, Colo.; exec. vice president, Donald S. Eber, 639 Board of Trade Bldg., Kansas City 5, Mo.

May 18-21—National Association of Flour Distributors, 43rd annual convention; Statler Hilton Hotel, Detroit, Mich.; sec., Philip W. Orth, Jr., 304 E. Florida St., Milwaukee 4, Wis.

May 20-24—American Association of Cereal Chemists, annual meeting; Chase Hotel, St. Louis, Mo.; exec. sec., Raymond J. Tarleton, 1955 University Ave., St. Paul 4, Minn.

Key AOM Committees Named

Appointment of members to the four standing committees of the Association of Operative Millers has been made by Alden A. Ackels, Bay State Milling Co., Winona, Minn., AOM president.

TECHNICAL COMMITTEE

Chairman: John Wingfield, Colorado Milling & Elevator Co.

Members

Dr. John A. Shellenberger, Kansas State University, Manhattan; David C. Mattson, Atkinson Milling Co., Minneapolis; Jack S. Miller, Ismert-Hincke Milling Co., Topeka, Kansas; Dewey Robbins, Fisher Flouring Mills Co., Seattle; T. Chris Mills, Montreal; Walter R. Wichser, Quaker Oats Co., Barrington, Ill.; Garland King, Kansas Milling Co., Wichita; Curtis P. Lindley, Centennial Mills, Inc., Portland; Lyle C. Mertz, General Mills, Inc., Minneapolis; E. S. Dybevick, International Milling Co., Minneapolis; Tibor A. Rozsa, the Pillsbury Co., Minneapolis.

SANITATION COMMITTEE

Chairman: George B. Wagner, the Pillsbury Co.

Members

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GOLD MEDAL AWARD COMMITTEE

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'Round the Districts with AOM

District 2—

Insect Fogging, New Mill Layouts

Technical topics from insect fogging to new mill layouts came in for some intensive discussion at the fall meeting of District 2, Association of Operative Millers, at the Aladdin Hotel in Kansas City.

Alden A. Ackels, Bay State Milling Co., Winona, Minn., AOM's president, was on hand, as were most members of the association's technical committee and Don S. Eber, Kansas City, executive vice president. Allied tradesmen, under direction of Walter W. Cochren, Wallace & Tiernan, Inc., opened the get-together with a social hour for the millers, which was rounded out with an evening of entertainment and dancing arranged by Thane J. Olsby, Industrial Fumigants Co., Kansas City.

Swinging into its technical program the following morning, the district heard from several speakers, with S. J. Mooney, International Milling Co., chairman, presiding.

Jack Ward, the Faeth Co., Kansas City, discussed and demonstrated the BVI insect fogger, and Roger Pratt, Wallace & Tiernan, led a discussion on chlorination, wheat tempering and wheat wash water. James Doty, Doty Technical Laboratories, covered some of the problems which the miller faces with the 1961 winter wheat crop.

Emil Kliebenschaedel, the Buhler Corp., discussed various layouts for new flour mills.

Also presiding were Jack Miller, Ismert-Hincke Milling Co., Topeka, Kansas, vice chairman of the district, and George Smutny, Entoleter, Inc., Kansas City, secretary-treasurer. «

District 7—

Joint Session with AACC Section

Mill management, the processing and uses of Redi Wheat, and a resume of plans for the 1962 annual technical conference and trade show in Denver were highlights of the meeting of Texhoma District 7, Association of Operative Millers, held at Lake Murray Lodge, Ardmore, Okla. The district met jointly with the Lone Star Section, American Association of Cereal Chemists, and drew an attendance of 96.

The principal subject, mill management, was covered by Leslie A. Ford, president, Shawnee Milling Co., with Ray Suttle, executive secretary, Oklahoma Wheat Growers Assn., speaking on Redi Wheat. To augment Mr. Suttle's presentation, those in attendance were served a salad made of Redi Wheat at the banquet held in conjunction with the two-day session.

Donald S. Eber, AOM's executive vice president, was on hand to update members on association affairs and to outline plans for the technical conference and trade show in Denver next May 14-17.

Members of the allied trades sponsored social hours both evenings and provided music for dancing following the banquet. Thomas Cook, Cook & Cook, Dallas, Texas, served as master of ceremonies at the banquet.

The millers' portion of the program was introduced by Thomas F. Thomas, Shawnee Milling, district chairman. Arrangements for the two-day meeting were made by Henry H. Stark, Ross Machine & Mill Supply Co., Oklahoma City, secretary-treasurer of the district. «

District 8—

Joins with AACC Members

Operative millers and cereal chemists combined to provide an attractive technological program at Vineland, Ont., Sept. 23. Association of Operative Millers District No. 8 joined with the Toronto and Niagara Frontier sections of the American Association of Cereal Chemists. And together they racked up an attendance of 140 members and guests.

Presiding over the sessions were the three chairmen of the groups—Arthur N. Hibbs, International Milling Co. for District 8, P. R. Templin, J. R. Short Canadian Mills, Ltd., for Toronto, and Franklin P. Wagner, Feedstuff Laboratories for Niagara Frontier section.

James G. Wharry, president of the Quaker Oats Co. of Canada gave the traditional address of welcome from management. A topic of interest to millers and chemists alike was assigned to Joseph H. Hulse, deputy director of research for Maple Leaf

Statement required by the Act of Aug. 24, 1912, as amended by the Acts of March 3, 1933, July 2, 1946, and June 11, 1960 (74 Stat. 208) showing the ownership, management, and circulation of The Northwestern Miller, published bi-weekly at Minneapolis, Minn., for Oct. 16, 1961. The names and addresses of the publisher, editor, managing editor, and business manager are: Publisher, The Miller Publishing Co., Minneapolis, Minn.; Editor, George E. Swarbreck, Minneapolis, Minn.; Managing Editor, Kenneth W. Wakershauser, Minneapolis, Minn.; Business Manager, Wilfred E. Lingren, Minneapolis, Minn. 2. The owner is: The Miller Publishing Co., Minneapolis, Minn., principal stockholders of which are: Paul A. Anderson, Minneapolis, Minn.; Claudia I. Baum, Scottsdale, Ariz.; Walter O. Buchkosky, Minneapolis, Minn.; Paul L. Dittemore, Glenbrook, Conn.; First National Bank of Minneapolis as Trustee under agreement with The Miller Publishing Co., dated Dec. 29, 1955; George L. Gates, Minneapolis, Minn.; Thomas A. Griffin, Minneapolis, Minn.; Robert M. Harrison, LaGrange, Ill.; Milton B. Kihlstrum, Minneapolis, Minn.; Wilfred E. Lingren, Minneapolis, Minn.; Evelyn B. Martin, Floral Park, L. I., New York; Sara S. Michener, Minneapolis, Minn.; Donald G. Neth, Minneapolis, Minn.; H. J. Pattridge, Wayzata, Minn.; George W. Potts, Minneapolis, Minn.; Dorothy Beatty Pratt, Minneapolis, Minn.; Don E. Rogers, Chicago, Ill.; R. Dale Swenson, Minneapolis, Minn.; Carl R. Vetter, Minneapolis, Minn.; Mrs. Rebekah S. West, St. Louis, Mo. 3. The known bondholders, mortgagees, and other security holders owning or holding 1% or more of total amount of bonds, mortgages or other securities are: None. 4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner. 5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: 3,411. Wilfred E. Lingren, Business Manager. Sworn to and subscribed before me this 27th day of September, 1961. J. G. Pattridge, Notary Public, Hennepin County, Minn. My commission expires March 17, 1964. (Seal.)

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Opportunity in Process Development Engineering Department of midwestern manufacturer.

Will develop commercial scale processes of new products and identify and correct processing problems of present production.

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Mills, Ltd.—problems of food as part of defense. Pneumatic conveying and bulk storage were handled by Donald Noyes, Salina Mfg. Co. and Jarvis Construction Co., Inc.

The story behind the packaging of bakery products was told by S. J. Kalich, chief chemist of Christie, Brown & Co., Ltd.

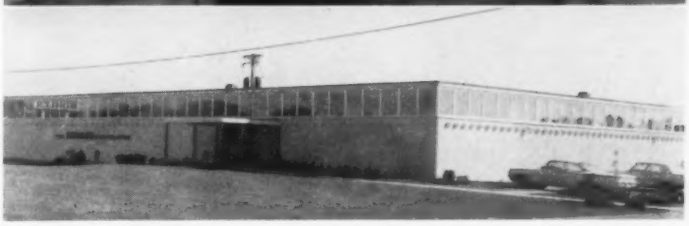
Slides of the fire at the Port Colborne mill of Maple Leaf were shown by Stuart Butler, immediate past president of AOM. (The mill is in process of rebuilding and is expected to be operational before the end of the year.)

Flour management took a look at flour control laboratories through the eyes of Donald Mennel, Mennel Milling Co.

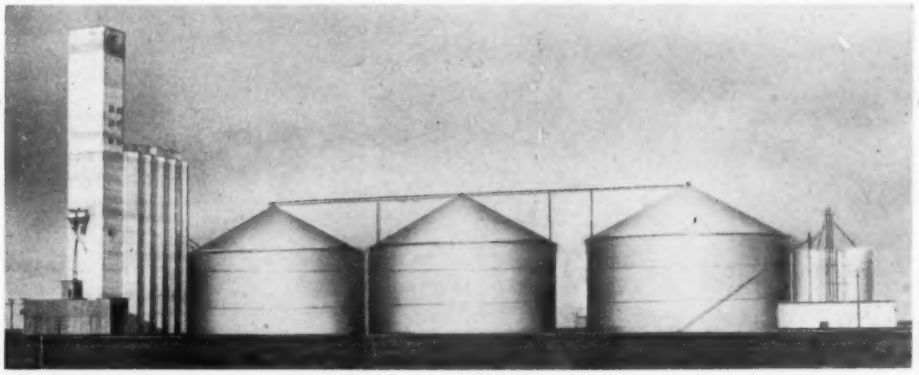
The program was rounded out by a discussion of semolina milling presented by Maple Leaf's Alan Duckworth.

Mr. and Mrs. Lloyd B. Ash of Quaker Oats held an open house for those in attendance and the allied trades provided a social hour and entertainment at the banquet.

Mr. Ash was elected chairman of the district with Richard Gosnell, the Pillsbury Co., Buffalo, as vice chairman. Roy Kehr, Kressilk Products Co., continues as secretary-treasurer. «



DR. ROLF BUHLER, general director of Buhler Bros., Uzwil, Switzerland, center, was a recent visitor to the U.S. One of his principal interests was to see the new "office home" of the Buhler Corp., U.S. affiliate, now operated just west of Minneapolis. With Dr. Buhler are Curt Schneider, secretary-treasurer of the U.S. organization, at the left, and C. Rudolph Moor, president, at the right. Dr. Buhler is a cousin of the Swiss firm's owner, Dr. Rene Buhler. In the lower photo is the new U.S. headquarters building.



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3 Million Bushels
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GRIST of GRINS

The height of devotion, it seems to us, was shown by that flagpole sitter when his wife died.

Out of respect for her memory, he lowered himself to half mast.

◆ ◆ ◆

Adam and Eve were naming the animals, when a hippopotamus strolled past. "Well," said Adam, "what are we going to call that?"

"Let's call it a hippopotamus," replied Eve.

"Why?" asked Adam.

"Because, dear," said Eve, "it looks more like a hippopotamus than anything we've seen so far."

◆ ◆ ◆

"I don't like Bob. Last night I wanted to show him how well I could whistle, and when I puckered my lips real nice—"

"Well, what then?"

"He let me whistle."

◆ ◆ ◆

Ali Baba went up to the entrance of the cave and cried, "Open, Sesame!"

And a voice from the cave replied, "Sez who?"

◆ ◆ ◆

After having carefully examined 759 horse-tail hairdos we have come to the firm conviction that a horse's tail looks better on a horse.

◆ ◆ ◆

Two men were leaving a restaurant together, and one of them noticed that his companion gave the hat-check girl a dollar.

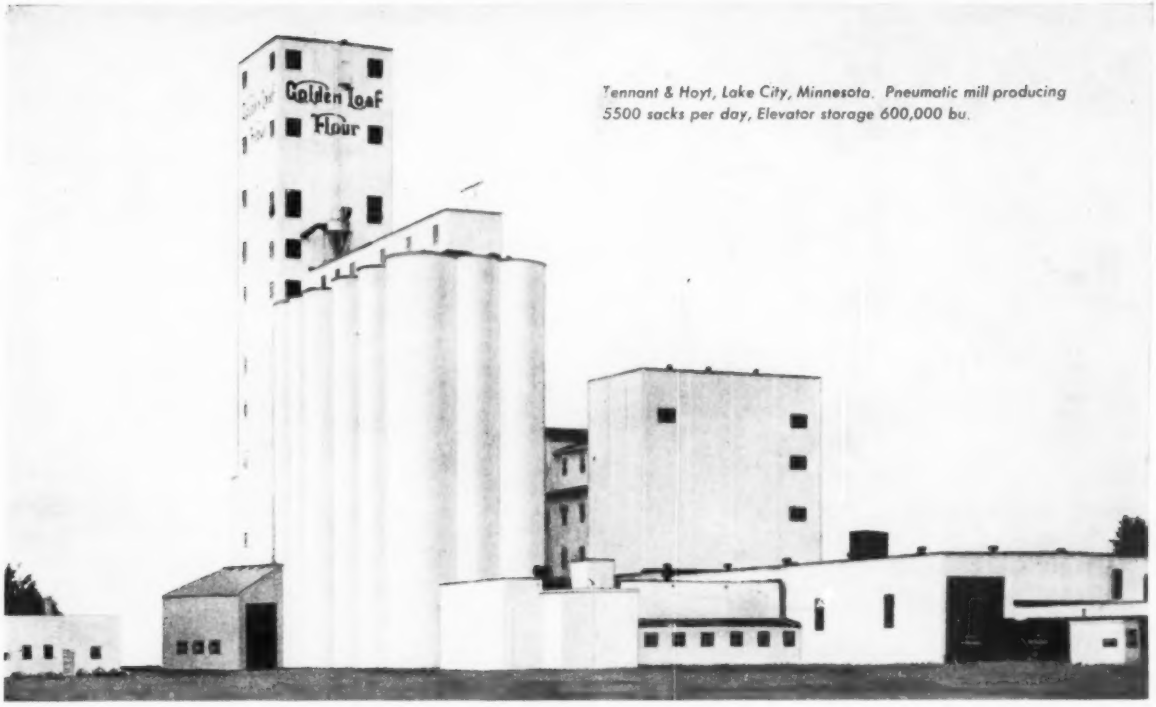
"You make the rest of us look cheap when you give the girl a tip like that," he remarked when they were outside.

"It's worth it," replied his friend. "Look at the hat she gave me!"

◆ ◆ ◆

A gang of country roadmen were way out in the country when they discovered they'd left their shovels in town. They phoned their foreman back in town about the trouble.

He replied: "I'll send the shovels out right away by truck. Lean on each other until they get there."



Tennant & Hoyt, Lake City, Minnesota. Pneumatic mill producing 5500 sacks per day, Elevator storage 600,000 bu.

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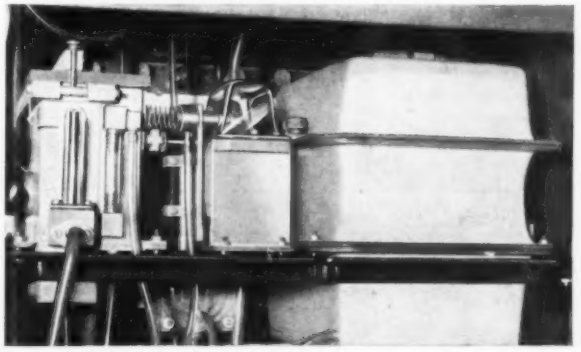
To give its strong spring wheat flours that extra kick, Tennant & Hoyt chooses W&T flour treatment.

Experience proves that Dyox® strengthens gluten to maximum, makes doughs more machinable, prevents "stick-ups". And there's no waste with W&T's Dyox. Accurate proportioning equipment makes chlorine dioxide gas as it is needed —applies it uniformly in precise amounts.

Along with Dyox, Tennant & Hoyt uses Novadelox® to whiten and brighten flour . . . give it the color consumers prefer. Novadelox is W&T's powder bleaching agent—made by W&T, distributed by W&T.

Tennant & Hoyt is only one of the many milling companies using W&T flour treatment. If your mill is not one of these, investigate the advantages of Wallace & Tiernan's complete flour service.



Proportioning assembly of Dyox machine. This is the heart of the Dyox Process. Here, proportional amounts of air, chlorine, sodium chlorite are metered. When mixed in a reaction tower, chlorine dioxide gas results. This is generated as needed and metered as a gas not a liquid.

WALLACE & TIERNAN INC.

NOVADEL FLOUR SERVICE DIVISION
25 MAIN STREET, BELLEVILLE 9, NEW JERSEY

N-120.64

"What makes bread so good, Mommy?" "It's vitamin and mineral enriched, dear."

It's the combined craftsmanship of two great industries . . . baking and milling that makes bread not only good tasting; but mighty good *for* folks. There's something special in bread that wasn't there when Mother was a little girl. It's a magic ingredient called Enrichment. But, young ladies at snack time aren't much interested in the fact. *All* they know is that bread tastes extra good, makes them feel good and that Mom always has plenty of it on the table. And, that's all she *has to know* about bread because of your contributions.

You've helped supply one of the most vital foods for growth . . . bread. It's essential; it has been, down through the ages. The American flour enrichment program has contributed much to the buoyant health, the physical and mental vigor of our youngsters. General Mills is proud to have had an active part with the bakers and millers in making today's bread better than ever before.

Good eating will always begin with bread

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